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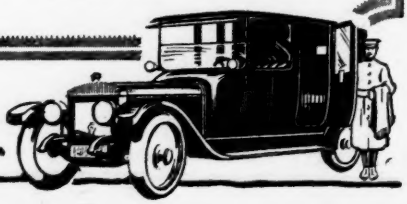

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VOL. XII. OCTOBER, 1922. No. 46.

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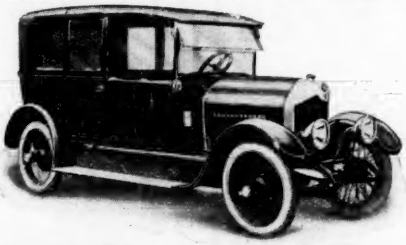

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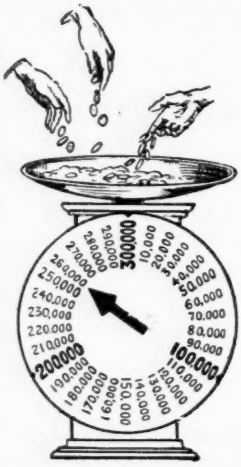

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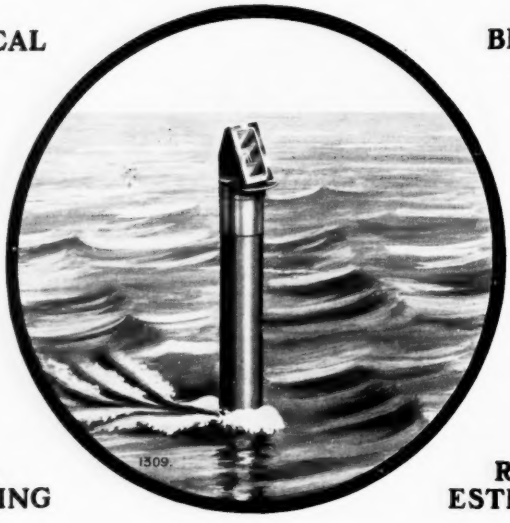

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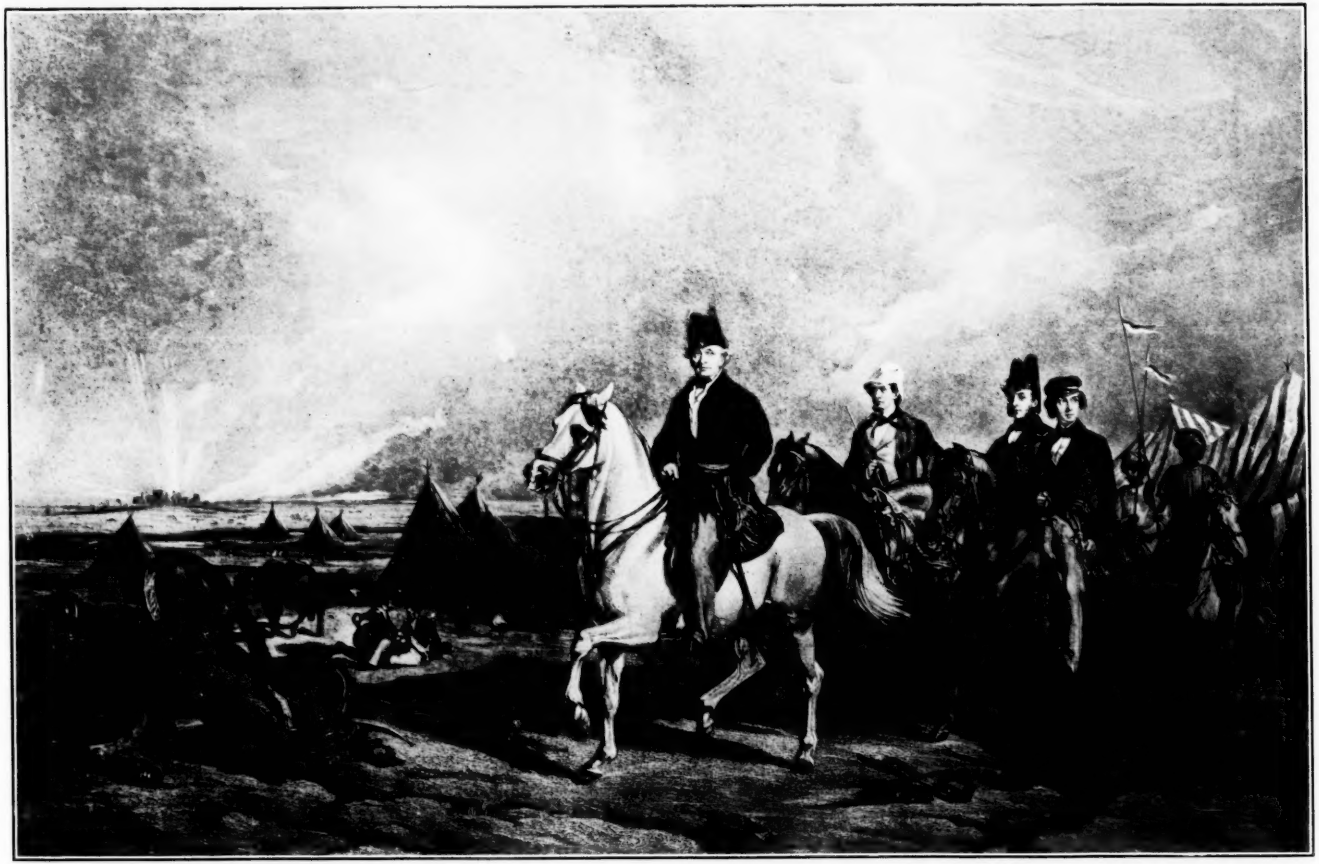

LIEUT.-GENERAL VISCOUNT HARDINGE, G.C.B., AND STAFF ON THE FIELD OF FEROSHUHUR.
From the painting by Francis Grant, A.R.A.; engraved by S. Reynolds; published 1849.
From an old print in the Royal United Service Institution.

SECRETARY'S NOTES.

I.—Council.

The Council regret to report the death of Lieut-General His Highness Maharaja Bahadur Sir Pratap Singh of Jodhpur, G.C.B., G.C.S.I., G.C.V.O., who was the Honorary Member of the Council for India.

Lieut.-General His Highness The Maharaja of Gwalior, G.C.S.I., G.C.V.O., G.B.E., has been appointed the Honorary Member of the Council for India, vice the late Lieut.-General His Highness Maharaja Bahadur Sir Pratap Singh of Jodhpur.

II.—Officers joined.

The following Officers have joined the Institution during the months of August, September and October, viz. :—

Captain A. J. Peareth, The Buffs.
Lieutenant J. A. Salomons, I.A.
Captain C. J. R. Turner, I.A.
Major E. D. H. Stocker, The King's Regiment.
Lieut.-Colonel C. O. P. Gibson, M.C., 4th Bn. Northumberland Fusiliers, T.A.
Captain H. P. W. Hutson, D.S.O., O.B.E., M.C., R.E.
Major B. T. Burbury, M.C., The Green Howards.
Major R. G. Fenwick-Palmer, R.G.A. (T.A.).
Lieut.-Colonel F. L. Footner, D.S.O., T.D., D.L., 4th Bn. Hampshire Regiment (T.A.).
Lieut.-Colonel P. R. O. A. Simner, D.S.O., 10th Bn. London Regiment (T.A.).
Lieut.-Colonel R. de V. Williams, R.F.A. (T.A.).
Lieutenant A. C. Mitchell, R.E.
Captain H. de L. Penfold, I.A.
Captain J. F. Meiklejohn, I.A.
Lieutenant H. Hammond, O.B.E., M.C., Dorsetshire Regiment.
Lieutenant R. A. Anderson, M.C., The Cameronians.
Colonel A. L. Barrett, D.S.O., I.A.
Major E. G. Howlett, M.C., I.A.
Captain F. A. M. B. Jenkins, I.A.
Captain A. C. B. Dodd, I.A.
Captain E. P. Hardy, I.A.
Major H. G. Morrell, I.A.
Sub-Lieutenant T. D. Manning, R.N.V.R.
Lieutenant J. Keith-Edwards, M.C., Scots Guards.
Captain W. C. S. Haycraft, M. C., I.A.
Captain G. B. Fyldes, M.C., I.A.
Captain C. W. M. Norrie, D.S.O., M.C., 11th Hussars.
Captain G. L. Stratton, M.C., R.F.A.
Lieut.-Colonel P. Docker, 8th Bn. Royal Warwickshire Regiment (T.A.).
Major G. N. Dyer, D.S.O., The Queen's Royal Regiment.
Lieutenant W. L. Sparkes, Devonshire Regiment.
Lieutenant W. H. Townsend, R.D., R.N.R.
Lieutenant U. H. R. Broughton, 1st Life Guards.
Lieutenant M. A. James, V.C., M.C., Gloucestershire Regiment.
Lieutenant A. R. Haviland, late R.N.R.

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Captain S. Collingwood, M.C., R.G.A.
Captain B. Holmes, D.S.O., I.A.
Lieut.-Colonel E. J. Daniel, C.B.E., late Royal Lancers.
Flight-Lieutenant J. W. B. Grigson, D.S.O., D.F.C., R.A.F.
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"The advantages or disadvantages of a separate Air Force for the Royal Navy."

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VI.—H.M.S. "Victory."

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The Executive Committee, of which Admiral of the Fleet Sir Doveton Sturdee is the Chairman, hope that Members of this Institution will assist by becoming subscribers; also that subscription lists will be opened in every unit of the Navy, Army and Air Force; a shilling subscription from every individual in the Services would go a long way towards completing this fund; it is not for the great sums for which the Society is appealing, but from all classes of the British Empire at large.

VII.—The Museum.

The amount taken for admission to the Museum during the past quarter was :—

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(3530) A Silver Centre-piece, to commemorate the services of the Battalion during the Great War; the centre is in the form of a silver plinth, on one side of which are inscribed the names of the 23 Officers who presented the piece, and on the opposite side the names of the actions in France and Flanders in which the Battalion took part. On the remaining two sides are depicted battle scenes; the whole surmounted by the figure of an Officer. The base is silver and has two figures, one of a private soldier in the kneeling position, and the other of a Lewis gunner with machine-gun.

(3532) Victoria Cross, India Frontier medal with one clasp, "Pegu" and Indian Mutiny medal with two clasps, "Delhi" and "Lucknow," awarded to Private John McGovern, 1st Bengal European Fusiliers.

(3533) A Flag captured from the Rajah of Bullupghur near Delhi, in November, 1857, by the 2nd Bengal Fusiliers.

(3537) A Triangular Flag, captured from the Sikhs in 1849 by the 2nd European Regiment.

The whole of the above belonged to the Officers' Mess, 2nd Bn. Royal Munster Fusiliers, disbanded in 1922, and have been deposited by the Trustees, Messrs. Holt & Co., 3 Whitehall Place, S.W.1.

(7657) Four Squadron Guidons of the 19th Light Dragoons which were issued in 1781, and carried by the Regiment for 25 years. In the year 1885 the Curator of this Museum discovered these guidons in the hay loft of a farm near Thurles, Ireland, belonging to a Mrs. Armstrong, and she generously returned them to the Regiment. —Given by the Officers of the 19th Royal Hussars on the understanding that, should the Regiment be re-raised, they are to be returned.

(7658) Pair of white metal Kettle Drums, in use by the 19th Royal Hussars up to the time of their amalgamation with the 15th Hussars.—Given by the Officers of the 19th Royal Hussars on the understanding that, should the Regiment be re-raised, they are to be returned.

(7659) A Dervish Shield made from crocodile hide, taken during the Nile Expedition of 1884.—Given by the Officers of the 19th Royal Hussars on the understanding that, should the Regiment be re-raised, it is to be returned.

(7660) Officer's Dress Sabretasche of the 19th Royal Hussars.—Given by the Officers of the 19th Royal Hussars.

(7661) Officer's Sabretasche, Belt and Buckle of the Hussar Regiment of the Duke of Brunswick-Oels' Corps (The Black Brunswickers), which regiment was on the British establishment during the Napoleonic wars.—Purchased.

(7662) Officers' Dress Sword, Belt, Pouch Belt and Sabretasche of the Black Brunswickers.—Purchased.

(7663–7676 and 7706) Collection of Silver Cups, Trophies, Badges, etc., which belonged to the Officers' Mess, 1st Bn. Royal Munster Fusiliers, disbanded in 1922.

7663, 7664, 7666 and 7675 comprise the following: (1) Silver Centre-piece on ebony stand, in the centre a two-handled bowl standing on a plinth, inscribed "Presented to the Officers, 1st Royal Munster Fusiliers, by Colonel B. S. A. J. Marchant on relinguishing command of the Bn., March, 1909," Statuettes of an Officer and a Private standing on either side of the base. (2) Silver Candelabra Centre-piece, six branches, on glass and silver base, the centre-piece surmounted by statuettes of two Officers of the Regiment, presented by Lieut.-General George Warren, in 1861. (3) Silver Centre-piece in the form of a two-handled bowl inscribed on one side with a design in relief of the Battle of Plassey and on the opposite side "Presented to the Officers' Mess, 1st Bn. Royal Munster Fusiliers, by Colonel D. G. Johnston, in memory of over 26 continuous happy years spent in the Battalion, 1870–96." At the base are two statuettes of soldiers in old-time uniform. (4) Small brass Mortar captured in Burma, 1820.—Given by the Officers of the 1st Bn. Royal Munster Fusiliers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7667–7682) Collection of Silver Plate and Trophies which belonged to the Sergeants' Mess, 1st Bn. Royal Munster Fusiliers, disbanded in 1922.—Given by the Sergeants' Mess, 1st Bn. Royal Munster Fusiliers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7683) Drum-Major's Staff, 1st Bn. Royal Dublin Fusiliers, with silver ornamental top and silver chains down the Staff.—Given by the Officers, 1st Bn. Royal Dublin Fusiliers on the understanding that, should the Regiment be re-raised in the British Service, it is to be returned.

(7684) A pair of Drum Banners of the 21st Hussars in use until the conversion of the Regiment into Lancers.—Given by the Officers of the 21st Lancers on the understanding that, should the Regiment be re-raised, they are to be returned.

(7685–7690) Collection of Silver Plate and Trophies which belonged to the Officers' Mess, 1st Bn. Connaught Rangers, disbanded in 1922. 7688, 7689 and 7690 comprise the following: (1) A Silver Candelabra with six branches, and one central light, on a triangular base ornamented with three sphinxes and the badge of the harp. The sides are ornamented with the Battle Honours, Battle Scene, and the inscription "Bequeathed to the Officers of the Connaught Rangers by Edward Norton, late Major of the Regiment, who died of cholera in camp before Sebastopol on the 19th May, 1855." (2) Three Russian Drums captured by the Regiment at the Battle of Inkerman. (3) A Chair, captured at the taking of Sebastopol. (N.B.—This chair will, in future, be used by the Chairman in the Theatre.) (4) "Jingling Johnny," captured by the 88th Connaught Rangers at the Battle of Salamanca, from the 85th French Regiment of the Line. This instrument was originally the property of a Moorish Commander and passed to the Spaniards when they reconquered Spain. During the invasion of Spain by the French

(1808–9) it was captured by the 85th French Regiment, who surmounted it with an eagle.—Given by the Officers of the 1st Bn. Connaught Rangers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7691) King's and Regimental Colour of the 4th Bn. 62nd Royal American Regiment of Foot. In 1757 this Regiment was re-numbered the 60th Royal American Regiment, and is now the King's Royal Rifle Corps. The 4th Bn., to which these Colours belonged, was disbanded in 1763, after a distinguished career which included Ticonderoga.—Given by John Simmons, Esq.

(7693–7701 and 7704) Collection of Silver Plate, Trophies, Badges, etc., which belonged to the Officers' Mess, 2nd Bn. Connaught Rangers, disbanded in 1922. 7698, 7699 and 7701 are as follows: (1) A bandsman's Sword, picked up at the scene of the action at Bronkhorstspruit, Transvaal, and presented to the Battalion by Mr. A. H. Hunt, of Pietermaritzburg, Natal, in 1900. (2) A Music Pouch, with music complete, carried by one of the Band on the 20th December, 1880, when they were surprised at Bronkhorstspruit, Transvaal. (3) An Elephant Tusk, with silver snuffbox top, inscribed with the Battle Honours of the 94th Regiment. This tusk was one of two which were brought in by Sekukuni emissaries when approaching Sir Garnet Wolseley to discuss the terms of peace in 1879. The tusk was presented by Major and Brevet Lieut.-Colonel Murray, C.B.—Given by the Officers of the 2nd Bn. Connaught Rangers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7702 and 7703) Collection of Silver Plate and Trophies which belonged to the Sergeants' Mess, 2nd Bn. Connaught Rangers, disbanded 1922.—Given by the Sergeants' Mess, 2nd Bn. Connaught Rangers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7705) Nigerian War Drum, with two drum-sticks, from Northern Nigeria, where it was used by the Hausas for signalling and other purposes.—Given by Captain H. D. St. G. Cardew, R.F.A.

(7707) Drum-Major's Sash of the 1st Bn. Royal Munster Fusiliers, worn at time of disbandment.

(7708) Two Colour Belts, in use up to the time of the disbandment of the 1st Bn. Royal Munster Fusiliers.

(7709) Collection of Medals (36), awarded to N.C.O.s and men of the 1st Bn. Royal Munster Fusiliers.—Given by the Officers of the 1st Bn. Royal Munster Fusiliers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7711) The following Uniform of the Scarborough Volunteer Infantry worn by Major John Woodall, 1797: (1) Dress Coat, (2) 1 Pair of Wings with silver lace, (3) Waistcoat, (4) Sash, (5) 1 Pair of Spurs.—Given by G. H. Woodall, Esq., and Miss A. Woodall.

(7712) A pair of Regimental Colours of the 101st Royal Bengal Fusiliers subsequent to 1861.—Given by the Officers of the 1st Bn. Royal Munster Fusiliers on the understanding that, should the Regiment be re-raised in the British Service, they are to be returned.

(7713) A bronze Medal struck for the Inner Temple and given to the members of the Inn who voluntarily fought for their country 1914 to 1918.—Given by Lieut.-Colonel W. A. J. O'Meara, C.M.G., late R.E.

(7714) The Regimental Colours of the 88th (Connaught Rangers) Regiment of Foot, which were carried through the Peninsular War. The three inscribed plates, made from mutilated silver plate which had been stolen from the Officers' Mess in 1892 and subsequently recovered, record the history of these Colours and are placed below them.—Given by the Officers of the 1st Bn. Connaught Rangers.

(7715) Ship-boat Badge of H.M.S. "Bedford." Given by Captain R. Collins, C.B., R.N.

(7716) A Post-Captain, Royal Naval Undress Cap, circa 1875. It was that of Captain M. Hare, the commander of H.M.S. "Eurydice," wrecked off Spithead in 1878, and was recovered from the sea shortly afterwards.—Given by Vice-Admiral B. M. Chambers, C.B.

(7717) A porcelain Plate, being part of the service presented by the King of Prussia to Field-Marshal the Duke of Wellington in 1816, and bearing the Arms of the Duke in the centre. Given by Mrs. T. Faulkner.

(7718) A Worcester porcelain Plate, being part of the service which was made for Vice-Admiral Lord Nelson and bearing his Arms in the centre.—Given by Mrs. T. Faulkner.

(7719) A silk Tall Hat which formerly belonged to Field-Marshal the Duke of Wellington.—Given by Mrs. T. Faulkner.

VIII.—Museum Purchase Fund.

This Fund has been opened with the object of purchasing suitable exhibits which are from time to time offered to the Museum, or which are put up for sale at various auctions. The Council hope it will receive support from Members of the Institution who are interested in the Museum.

	£	s.	d.
Amount already acknowledged	54	4	0
B. E. Sargeaunt, Esq., M.V.O., O.B.E.	3	0	0
	57	4	0
Less expended to date	35	0	10
	£22	3	2

IX.—Gold Medal Essay (Military) 1922.

The following Essays have been received to date (31st October) :—

(1) "Hard pounding this, gentlemen; we will try who can pound the longest."

(2) "By learning you will teach and by teaching you will learn."

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ARTILLERY, AND THE LESSONS WE HAVE LEARNT WITH REGARD TO IT IN THE LATE WAR.

By COLONEL-COMMANDANT L. C. L. OLDFIELD, C.B., C.M.G., D.S.O.

Wednesday, 15th February, 1922.

LIEUT.-GENERAL SIR J. F. N. BIRCH, K.C.M.G., C.B., in the Chair.

THE CHAIRMAN: Ladies and Gentlemen, I do not think it is necessary to introduce Colonel-Commandant Oldfield to you, we all know what he did in France, and I will ask him to proceed at once with his Lecture.

LECTURE.

THE subject of this lecture is a very wide one and in the time permitted it is only possible to deal with a few of the many lessons learnt; others, equally important, can only be alluded to briefly.

The duties and scope of the Artillery increased as the war went on almost daily.

In fact it is not too much to say that when a weapon was developed or invented, the Artillery were at once asked either to help this weapon or to neutralise its effects.

When the enemy put out masses of wire, the Gunner was asked to cut it.

When his rifles and machine guns held up our Infantry in attack, the Gunner replied with a creeping barrage.

When the Higher Command decided to use gas the Gunner was asked to fire it in especially designed shells.

When Tanks were used in the attack the Gunner had to fire smoke as a screen, and, again, to knock out hostile tanks.

It is, I think, interesting to see how the official books described the characteristics and duties of Artillery in 1914 and 1921.

Briefly, in 1914, Artillery duties were described as follows :—

> " Till the enemy discloses his dispositions Artillery must usually limit its action to preparing to support the other arms as soon as occasion demands it."
>
> " Rapid fire cannot be maintained for more than brief periods without exhausting ammunition."
>
> " The duty of Artillery is to assist the Infantry to establish superiority of fire over the enemy."
>
> " Heavy Artillery is chiefly used with enfilade or converging fire, particularly on buildings and the enemy's guns."
>
> " Siege Artillery may be allotted to the field Army for special duties in connection with Fortress operations."

In 1921 the official book talks of barrages, gas shell, anti-aircraft guns, anti-tank guns, harassing fire, smoke shell, close support of Infantry guns, wire-cutting, co-operation with aeroplanes, counter-battery work, and emphasises the importance of medium, heavy and super-heavy guns and howitzers.

Artillery generally is described as being able to develop an overwhelming bombardment without previous warning, and to engage targets by day and night without observation and yet with accuracy.

Evidently there has been a great proportionate increase in the scope of the arm, but its primary *rôle* remains the same as it was in the days of Napoleon, namely, to assist the other arms in breaking down opposition and to afford all possible support to the Infantry with whom the eventual decision rests.

The train of thought expressed by some other nations that " the Artillery conquers, the Infantry consolidates," has of course no meaning in the British Army of to-day.

It may, I think, be assumed that a future war between Great Powers will begin with a period of open warfare, intense and short, and, failing a decision, a period of position warfare will ensue. This will last until one side, by increased numbers, skill, new or improved weapons, becomes strong enough again to compel the adversary to fight in the open.

With the present state of finances, no nation is prepared to spend large sums on new equipment. A war of the next few years would probably begin with very much the same weapons as were in vogue in November, 1918.

Still, it should be remembered that, just as the highwayman is more ready for a fight than the honest citizen, so the nation that desires war will generally have the lead in weapons and training.

But from the moment of the outbreak of war, the whole scientific and industrial strengths of nations will begin working at high pressure.

Tanks, aeroplanes, and other expensive implements of war will appear quickly in great numbers, though probably not before either a decision has been reached or position warfare has set in.

We have, therefore, to consider to-day not only Artillery as it would function at the beginning of war, but its duties after a few months of war.

And so perhaps the first lesson the gunner has learnt is to make himself ready to learn new lessons and adapt himself, when the time comes, for new machines and weapons and new tactics.

How many lives might have been saved if it could have been foreseen that an Army in defence would put out barbed wire quickly and that the Artillery would be asked to cut it ?

Surely the next war will see great developments in machine guns, tanks, wireless telegraphy, etc., and the Artillery must be prepared to co-operate with our Army in every kind of way and to neutralise improvements of the enemy.

In the late war the long static period gave us time to think, learn, and invent.

In the next war we may not be so fortunate.

Training of Personnel.

It is necessary, I think, for us all to remember that the British Army exists for all kinds of wars—not only great European wars against enemies of the first class in equipment and training—and that our training must be such as to fit us for many different kinds of fighting.

Above all it is necessary to get out of our heads the idea that we are likely to spend long years of static warfare and to prepare for that mainly. In fact our training should be such as to prevent static or position warfare.

If it does set in we must try and break it down.

Only manœuvre and movement can achieve decision, says Marshal Foch.

And the war of the future must be visualised always as a moving warfare.

Tactical exercises and practice camps have shown me how deeply rooted in our minds has the idea become that quickness of decision and action are no longer essential.

Commanding officers responsible for training will find only too many opportunities for rubbing in the necessity for an Army being even more mobile than it was in 1914.

Evidently much more is being demanded from the Artillery officer of to-day than before, and still more will be wanted in the future.

It is not enough for even a junior officer to know one gun and its equipment and ammunition thoroughly. He must not be a specialist in one branch of the arm. He must receive a sound general training not only in his own armament, but in others, and especially in Infantry work, so that he may be ready to take advantage of any changes in weapons or tactics which the future may bring forth.

These changes come slowly in peace time, but rapidly when war has started and economy no longer limits experiments and training.

The aim should be to make the young R.A. officer no longer think of himself as only one of a team whose main object is to create a good battery, but also as ready to assist in any way to help his side to break down the resistance of the enemy.

Indeed, much more attention must be paid to instruction of Battery officers in Artillery tactics. It is not sufficient to be able to hit the target. He must be on hand to hit the target at the right moment, sometimes on his own initiative, sometimes at the request of the Infantry or Aircraft.

It is even more important that senior Artillery officers should be able to think in terms of all natures of Artillery.

At the beginning of the Great War, for various reasons, officers of the Field Artillery had little knowledge of the possibilities and limitations of what was called Garrison Artillery, and *vice versa*.

A recent Committee was of opinion that the two branches of the Royal Regiment should be re-united.

If this re-union is not to take place it is at all events necessary that steps should be taken to ensure that senior officers of the Regiment are kept well up to date with the latest developments of guns and howitzers of all natures and be able to handle them in war. I think this is a lesson which has not received the attention it deserves.

Much more responsible work, too, must be expected of the non-commissioned officer.

He must be taught to rely on himself and expected to observe fire, re-sect positions, lay out lines of fire, and do many of the duties which a subaltern generally does.

This is already done in Foreign Armies, and will help to solve the eternal problem of shortage of trained officers.

If this is done in annual practice camps and tactical exercises as a matter of course, non-commissioned officers will soon learn to interest themselves in their more extended duties and get increased confidence in themselves.

ARTILLERY IN ATTACK.

Pre-war ideas contemplated an artillery duel, after which the winning artillery would concentrate its fire on the enemy's infantry and prepare a way for the attack.

Concealment of guns and map-shooting without previous registration have modified the artillery duel.

Infantry while advancing cannot develop sufficient fire-power to overcome the greatly increased defensive power of rifles and machine guns.

We thus learnt early in the war that Infantry cannot advance by daylight above ground against defenders who are properly arranged in depth, unless it has mechanical help from other arms. Generally this help is provided by Artillery or Tanks.

It is necessary to call attention to the great difference in the support which the Artillery can provide if time is available to make preparation and bring up ammunition.

In such case the Artillery support may be briefly described as follows :—

(*a*) Most of the heavy and medium howitzers and a proportion of field guns and howitzers try with H.E. shell and gas to neutralise the enemy's guns.

(*b*) A small proportion of field guns advance in close touch with the attacking Infantry. These guns do not take part in the barrage as it is essential that they should be mobile and all ranks fresh when the time comes.

(*c*) The remainder take part in the barrage.

In the German Army this took the form of heavy concentrations of fire from howitzers, field guns and mortars, on different chosen localities, the fire lifting on to a new area according to a time-table. This worked well with specially trained troops when time had been allowed for careful reconnaissance of the position to be attacked. It is, however, less suitable for open warfare when these conditions cannot be carried out. Also the attacking Infantry cannot keep as close to the barrage as in the case of a British or French continuous line barrage.

A British barrage extends in depth into the hostile defence line far enough to smother machine guns and rifle-aimed fire, say 1,500 yards. This belt of fire advances in front of the Infantry at a prescribed rate, which becomes gradually slower as the attackers advance, and pauses on certain lines, the whole moving according to a fixed time-table, which is indicated to the Infantry by a barrage map.

A well arranged barrage of this type with almost unlimited ammunition was one of the causes of the successful attack on the strong position of Beaumont Hamel in November, 1916. It showed great advance on the thin artillery support that was possible at Neuve Chapelle in March, 1915.

An effective barrage of this kind can only be provided for a frontage of 1,200 yards with the guns at present arranged for a Division.

In view of the frontage of a Division being generally much more than this, the deficiency in guns must be remedied in some way, either—

1. By more guns being made available, or
2. By the guns shooting at a greater rate, or

3. The use of Tanks may make a thinner barrage effective, or
4. By using an effective barrage on certain localities only and taking the intervals by turning movements.

It is likely that this last is a possible solution, provided that the Infantry are highly trained.

Increasing the rate of fire, except for very short periods, is liable to exhaust the gun detachments and lower the accuracy of fire.

It should be remembered that an unnecessarily intense barrage means (for the same number of guns available) a narrower front to attack.

Also a greater rate of fire (for the same amount of ammunition) means less depth of attack.

These are points which the Higher Command must weigh very carefully. Certainly the broader the front attacked the greater the chance of success.

No penetration can be decisive unless it reaches the enemy's gun line in the first rush of the attack.

In fact the barrage is a good servant but a bad master, and must be made to conform to the plans of the Commander.

It should be noted that the guns of the attackers must have at least as great a range as the guns of the defenders which will be arranged in depth. If they have not, the Infantry will not have the barrage to help them as far as the defenders' gun lines.

At the present time the British field gun has not got this necessary range.

If the barrage guns cannot reach the enemy's gun line the only alternative is to advance the guns during the barrage, but not more than half the number being on the move at the same time.

This means that there must be longer pauses or that the barrage will be thin at times while the guns are moving. Re-secting new positions and making new barrage tables involve still further delay.

What I have been describing applies only to a grand attack, when there has been plenty of time for preparation and an ample supply of ammunition.

In moving warfare or where small forces are engaged Artillery support will generally take the form of concentrations on localities for short periods of time.

Or a simple form of barrage can be extemporised in a few hours if gun positions can be accurately re-sected and good maps are available.

But it should be remembered, and especially so by the Infantry, that a brigade of Light Artillery can only provide an effective barrage over about 400 yards, and that the amount of ammunition available in the Division will only allow each gun to fire for one hour continuously.

I think the expression " barrage fire " should not be used for a less number of guns than that in a brigade of Light Artillery.

After General Byng's attack at Cambrai, in November, 1917, all attacks tried to introduce the element of surprise, and it is certain that

when tanks are used this will always be attempted in future. It will also be tried in moving warfare or when the wire in the defenders' position is not so thick as to require several days' bombardment.

It is probable, however, that, in some way or other, the defender will know an attack is imminent, though the exact moment of zero will be uncertain.

The mobile guns accompanying the Infantry have an extremely difficult task. Their very presence has the greatest moral value, both for their Infantry, and conversely for the enemy's.

They will generally be used as sections or even single guns. These guns should ordinarily not be used for tasks which machine guns could do equally well. A machine gun is easier to conceal and quicker to bring into action.

The proper target for a gun is one which is beyond the power of a machine gun, such as a house, a fortified strong point, a shielded gun or a tank.

In open country it will be hardly possible for them to move in daylight within rifle fire of the enemy and this means great difficulty in communication with subordinate Infantry commanders.

It is in close country fighting, however, that these forward guns will be most wanted.

In such circumstances guns can often be brought up to within a few hundred yards of an enemy's strong point and will not be discovered until they open fire. In some cases Pack Artillery would be more suited for this kind of work than field Artillery, expecially the Pack Howitzer with its high trajectory.

This very close support can be afforded much more frequently and successfully than is generally believed, but needs great skill in reconnaissance.

Another difficulty is that at short ranges guns cannot shoot over the heads of our Infantry unless the ground is very favourable.

In many cases it is the only possible method, as, apart from the communication difficulty, the guns placed at greater range would not clear intervening woods, hedges, houses, etc.

Forward guns of this type will nearly always fire by a prearranged time-table, arranged directly by the Gunner officer with the Infantry unit commander.

As the unexpected machine gun is one of the chief obstacles to advancing Infantry, even when working behind a barrage, it is important that this close Artillery support be thoroughly understood and practised together by junior officers of the two arms.

Certainly it should be a regular feature in both field days and tactical exercises without troops, on the same lines as co-operation between Infantry and Tanks.

Probably improvements in wireless telegraphy or telephony will solve the communication difficulty and the adoption of Field guns on some form of Tank tractor will make the difficulties of advancing under

rifle fire easier to surmount. But on both these points I shall have something to say later.

A Gunner is often asked as to what time suits him best for the start of an attack. The answer is that, though daylight is less tiring, he can with modern appliances shoot equally well at all hours. As the guns of the attack are shooting from a time-table and by map-shooting his fire cannot be corrected by observations in the earlier stages.

At the same time there is a limit to the endurance of the Gunner in action, and in the Great War, and especially at Ypres salient in the autumn of 1917, he was often set too great a task.

It may be taken as a fact that a barrage in which each 18-pdr. gun fires 500 rounds is about as much as he can undertake without a loss of accuracy in fire, and the same applies proportionately to other natures of Artillery.

Artillery in Defence.

A force in defence has necessarily for the time being given up the initiative, at all events locally. It is this that makes the task of the Artilleryman so difficult.

He is not making out a plan to work with the Infantry in a pre-arranged attack at a chosen time, but has to stand ready to help repel an attack at any time; and this attack may be delivered in many different ways.

I cannot do better than quote four different cases where guns were used with decisive effect on an attacking enemy.

First, the classical case on 15th July in Champagne when General Gourand got from German prisoners the exact time, place, and scope of the forthcoming German attack. In this case the French Higher Command withdrew its troops in the forward zone at the last moment. The German Artillery spent its ammunition on empty trenches and when their Infantry advanced they were overwhelmed by French Artillery firing by a pre-arranged plan. This was the last great German attack which ended in confusion and heavy losses in material and *morale*.

Next I will quote the case of a small German counter-attack made by three weak companies against the 61st Division in April, 1918, just east of Robecq. It seemed certain that the Germans would try to retake a small ridge near Pacaut. The C.R.A. arranged for three bursts of harassing fire to take place at likely times for a counter-attack. One of these bursts of fire was timed for an hour before dawn, and took the form of a creeping barrage over an area of 1,000 yards square just in the enemy's lines. As it happened this barrage just missed the leading company, but practically destroyed the other two companies. The leading company advanced in a hesitating manner and practically surrendered *en bloc*. No further attack was attempted, the British casualties were nil.

The third case I will quote was at the Third Battle of Ypres. On the afternoon of the 23rd September the Germans, in greatly superior

numbers, counter-attacked from Poelcapelle on to a British defensive flank. This counter-attack was in full view from the British observation stations. The whole attack was broken up and the German Infantry never got within assaulting distance of the defenders' lines.

The fourth case I shall quote was an incident in the Cambrai battle of 20th November, 1917. The attack of the 51st Division was held up at Flesquières by the indomitable courage of one German Artillery officer who, at close range, with his field gun firing direct, knocked out tank after tank as it advanced to make a road through the barbed wire. His gun was just behind a ridge, and so invisible to the British Artillery.

Now these four cases provide us with four chief lessons to be learnt as regards Artillery in defence.

Artillery must be capable of producing annihilating concentrations of accurate fire when ordered by the Higher Command.

Guns must be arranged in depth and even the most subordinate commander must be ready to use his initiative in the most unexpected situations.

Observation must be obtained and communications established at all costs and every opportunity taken of bringing the enemy's advance to a standstill.

The attacking Infantry are advancing at a pre-arranged pace, and if they can be so delayed as to lose their protective barrage they have little chance against the Infantry and machine guns of the defence.

Harassing fire must be carefully arranged by the General Staff so as to inflict casualties and break up concentrations. Every bit of information and probable action of the enemy is to be considered and no round fired without careful forethought.

The arrangement of putting down a protective barrage just in front of a defending Infantry after the attack has commenced finds few supporters now. It is the duty of the Infantry to deal with the first elements of the attackers. The duty of the Artillery is by counter-preparation and counter-offensive to inflict casualties on the enemy, to break up concentrations, and to isolate the first waves of the attack.

The defence, like the attack, must keep a certain number of guns and howitzers, heavy and light, mobile to deal with fresh situations.

Field Service Regulations lay down that Artillery and machine guns are the backbone of the defence. There are always certain areas that are dead ground as far as machine guns are concerned. On the other hand, guns can be sighted so as to shoot almost anywhere. It therefore follows that defensive fire of guns and machine guns must be carefully co-ordinated.

It is also essential that a Senior Artillery officer should be consulted before taking up a position of defence. The German gunner evidently had a lot to do with the siteing of the Hindenburg Line, which gave him safe observation and good fields of fire while denying the same to our Artillery.

Let us consider what a difference it would have made to us if we

had appreciated this lesson in November, 1914. Surely experienced Artillerymen would have been consulted and the line adjusted so as to give us all possible advantages not only for defence but for offence when the time came.

I am speaking of course purely from the Military point of view. Political considerations might compel a different line of conduct.

Artillery officers must be practised in reconnoitring country with this object in view, so that when asked for an opinion they can give reliable advice. It should certainly be one of the features of Command and Divisional Tactical Exercises without troops.

Artillery fire must be very flexible. In defence command must be more decentralised and yet the Commander must be able at any moment to resume direct command.

Constant reconnaissance must be going on and a ready response made to any calls from the Infantry or from Aircraft.

The defence should try to provide surprises for the enemy and not leave all the initiative to the attackers.

The late war gave many instances where the guns of the defenders became invaluable rallying points to Infantry who had been severely handled.

A well-known case was specially singled out for description in Lord Haig's despatch :—

This was the case where two R.F.A. Officers held the crossings over the La Bassée canal near Hinges for six critical hours on 12th April 1918.

I have made little mention of counter-battery work in attack or defence, as it is better dealt with under a separate heading, and this applies also to gas and smoke.

Counter-Battery Work.

The Artillery duel has taken another form now that batteries fire from concealed positions, and in many cases are kept silent till wanted for serious operations.

As before, the object is to neutralise all hostile batteries which can fire on the Infantry and prevent their movements.

In moving warfare, or where small forces are engaged, the Artillery commander of the force makes use of the guns at his disposal. But with larger forces, or when the fighting has assumed a static character, even for a few days, a regular system of counter-battery work comes into play.

Each Corps has a Counter-Battery Staff Officer whose duty it is to locate the enemy's guns by every means at his disposal and prevent their firing either by :—

1. Destructive shoots with ground or air observation or by means of sound ranging.
2. Concentrations of fire by map-shooting.

3. Neutralising by gas shell, etc.
4. Organised harassing fire, which affects their supply of ammunition and supplies.

Any or all of these methods may be used successfully, but they all require a very free use of ammunition.

For instance, under the most favourable circumstances it is calculated that a 6-inch howitzer would require about 500 rounds to knock out a hostile battery by direct hits with destructive fire, and the other methods are even more extravagant in ammunition.

In static warfare it may be taken that almost every active hostile battery will be located so long as it remains in one position.

Besides flash spotting, ground and air observation, the counter Battery Staff Officer has new methods of locating guns.

The two most important ones are air photography and sound ranging.

On an air photo a trained eye can locate almost every battery as it is, even with the freest use of camouflage, almost impossible to hide tracks made by bringing up supplies and ammunition unless the gun position is actually on the edge of a road. Of course such a site for a battery is very undesirable for other reasons.

To the pre-war Gunner sound ranging seems almost miraculous. A sound ranging section can locate a hostile battery to within 50 yards and give the position of the shell burst and the calibre of the gun. It can then range a battery successfully on to the hostile battery and correct its fire—all this of course only when conditions are favourable, but it shows the immense possibilities of the new invention.

During a moving fight ground observation is the best of all methods, but if I may be allowed to prophesy, I think that most counter-battery fire will take the form of concentrations fired in answer to calls from aircraft. Every Field Artillery brigade and Heavy or Medium battery has its own wireless set, which should be always on the alert to answer such calls.

Indeed, our French friends believe that the days of pinpoint firing are over and that it is in concentrations that Artillery of the future will be chiefly engaged. This may be the case, but I hope it will always be part of the creed of a Gunner that unobserved and uncorrected fire is only permissible when there is no alternative.

Gas and Smoke Shell.

The advisability of using gas shell seems to be still a matter for consideration in the minds of statesmen. For us as soldiers the obvious duty is to prepare for its use when and if we are allowed to use it.

Evidently its use against uncivilised or even badly equipped enemies might in some circumstances be decisive.

The best known instance of the use of gas shell on a large scale was in September, 1917, when Von Hutier completely overwhelmed the Russian positions, thanks to surprise and the intensive use of gas shell.

Gas shell contains many kinds of poisonous fluids, which may be roughly grouped into two classes.

First, persistent gas, which lingers for a long time when weather conditions are favourable; and secondly, non-persistent gas, which soon disappears.

It should, however, be clearly realised that gases have many and varying characteristics other than their relative persistence; "penetration" is one of these, *i.e.*, I mean by penetration the power of gas to penetrate an enemy's gas mask.

"Penetration" is, of course, a variable power, depending on the continuous struggle between new gases and new respirators.

Gas is a new weapon, with almost unlimited possibilities against combatants and non-combatants alike. Persistent gas shell should never be fired in the attack without reference to the General Staff or to the Infantry commander concerned. With this exception, gas shell will be used like other shell—that is, at the discretion of the Higher Artillery Commander.

Gas clouds can be produced by all natures of guns and howitzers suddenly opening concentrated fire at a quick rate.

Splinter proof cover, including buildings of all sorts, presents very unfavourable targets for attack by gas shell, which may for this reason have their decided part in future moving warfare.

The effective use of gas shell depends on :—

(*a*) Suitable meteorological conditions, together with a knowledge as to how best to turn those conditions to account.

(*b*) Appreciation of the properties of the various gas shell at disposal.

Limitations of transport under moving warfare conditions demand that the proportions of shrapnel, H.E., gas and smoke shell shall be carefully determined before movement takes place.

In static warfare it has a most demoralising effect on all ranks. The nation which wants a war will probably first make certain of a plentiful supply of some especially poisonous gas, which will give it a great advantage.

It must be remembered that gas is the cheapest engine of destruction we know of.

It is certain that all the leading nations are busy experimenting at the present time and that gas is already a far more serious factor than it was in 1918.

The outbreak of war between the leading nations will probably be heralded by tremendous gas attacks, which may have most serious consequences on *personnel* and *morale*.

Smoke.

Smoke is a weapon for attack, to conceal movements of troops and especially of tanks. It gives some of the advantages without the dis-

advantages of a night attack. It will probably be used largely in future in the attack. A defending force will, generally speaking, do nothing which would decrease its power of observation.

MAP-SHOOTING.

One of the most important developments during the war is in the direction of Predicted or Map-Shooting. Though no Gunner worthy of the name will ever neglect an opportunity of observing and correcting his fire by some means or other, the fact remains that a very high proportion of his fire will be unobserved and its accuracy will depend on the care and skill which have been exercised before opening fire.

In the words of the Field Service Regulations, the Artillery is able under certain conditions to develop an overwhelming bombardment without previous warning, and to engage targets by day or night without observation and yet with accuracy.

All barrage fire in attack, all gas and smoke shell fire, all night and dawn firing and most of the harassing fire depend on skill in map-shooting.

Even when observation is possible it is equally important to try and put the first burst of shell-fire near the target, as this is the only chance of catching the enemy unprepared.

During the process of ranging a good target men will naturally disperse and get under cover.

This is a point which the old-fashioned Gunner, for some reason, is apt to overlook.

It is worth while considering briefly the "certain conditions" I have given. They are as follows:—

1. The guns must be calibrated, that is, their muzzle velocity must be known under normal conditions. This is fully recognised, and every gun is marked with its muzzle velocity and the date on which it was last determined.
2. The meteorological conditions of the moment. This is met by sending out messages from Meteor six times in every 24 hours. In the last war these messages were sent by telephone wires. In the next they will almost certainly be sent by wireless.
3. The ammunition must be constant or grouped, according to weight. I will refer to this again later.

If the above conditions are carried out a well drilled battery can shoot down to within the error of the gun, *e.g.*, an 18-pdr. at 4,000 yards would drop all its shell within 80 yards of the target, *provided the maps are accurate* and give sufficient detail.

But the last condition is very difficult to secure, a fact which we are led to overlook because of the extreme accuracy of our maps in the theatre of war on the Western Front.

For accurate map-shooting the scale of the map must not be smaller

than $\frac{1}{20000}$th, say, 2 inches to the mile, and the levels must be contoured accurately to within 40 feet.

It is a fact that at this moment no such maps exist, except for the British Isles and some recent theatres of war.

If, therefore, our Artillery were asked to do accurate map-shooting or fire a barrage in a country such as the Balkan States they could only do so within the limits of accuracy provided by the maps.

Probably science will solve this, too, for us, if time and resources permit. Even now our Survey Department can map country from aeroplane photographs and print maps accurately in a few hours.

There are indications, too, that it may even be possible to obtain the levels of country so photographed, and it is of great importance that this great difficulty be successfully negotiated.

What is called "Survey Work" has become part of the duties of the Artillery officer. Not less than one officer per battery must be proficient in this, and all officers must have a good working knowledge of the latest methods of laying out lines of fire by day and night.

Communications and Observations.

These in future will nearly always be by telephone, wireless, or orderly. And it is of the greatest importance to develop wireless. The present C.W.W. is heavy, and its messages are liable to jamming. But even if it does take three men to carry one set, this is nothing to the number of men required to keep a line in working order.

In the smoke, gas and confusion of the modern battlefield I am afraid the flag and lamp will be of little value even in a moving battle. Till the wireless problem is solved recourse must be had sometimes to coloured lights to call on the Artillery for fire from the front line, though this method is both prehistoric and unsatisfactory.

It is of primary importance that Infantry officers should see that these signals are only sent on the right occasions. A wrong signal may mean a sleepless night for many tired men and wrong expenditure of tons of valuable ammunition, all of which has to be brought up under fire.

The most vital communication of all is *liaison* between officers of the different arms, and, however great the shortage of Artillery officers, this *liaison* should not be stinted.

It is difficult to overestimate the importance of communications in war, and as experiments in wireless communication are relatively inexpensive it is reasonable to hope that great strides will be made in the next year or two in both wireless telegraphy and wireless telephony. Most Artillery officers would prefer money and energy to be spent on this to almost any other expenditure.

I hope that what I have said as to the possibilities of map-shooting will not have given the impression that observation has become less important, for nothing is further from my thoughts.

It is true that much of our observation will come from the air, but, whenever at all possible, ground observation is the best, it being always remembered that observation without prompt and reliable means of communication is of little value.

Further, observation is not the duty only of the Artillery. Our resources are limited, and we must have the help of observers of other arms, who must be able to communicate with the guns.

I think I would call this one of the important Artillery lessons of the war.

Supply and Material.

A few remarks on supply and material will be of interest.

The number of types of guns and howitzers must be reduced as far as possible, not only to facilitate manufacture in quantity, but to simplify supply in the field.

The minimum range should be 10,000 metres.

As many field guns as possible should have the new split trail with wide traverse to knock out tanks.

Certainly the flank guns of field batteries should be equipped with this trail at once.

The different patterns of weights of shells, fuzes and explosives must be reduced to one standard type for each nature of shell; otherwise quick and accurate map-shooting will be impossible.

Arrangements must be made in peace time with industrial concerns so that suitable plant is ready to enable them to turn on to munition-making without delay. Some idea of the expenditure of ammunition in the war may be realised when I say that the Fourth Army fired 3,700 waggon loads of 18-pdr. ammunition alone on the one day of 8th August, 1918.

As regards guns and howitzers heavier than Field Artillery.

We began the war with 500 pieces of Artillery all being field guns and howitzers, except 24 60-pdrs. We ended with 6,500 pieces of Artillery, of which two-thirds only were field guns and howitzers.

This high proportion of the heavier natures was due no doubt to the long period of position warfare. In the next big Continental war a new proportion will have to be fixed. But it is certain that the Expeditionary Force will have at least one-quarter of its guns and howitzers of medium and heavy types.

Mechanical Transport of Artillery.

I must say a few words about Mechanical Transport of Artillery, for, whether we like it or not, it is bound to come, though not so soon as some enthusiasts think and hope.

In 1918 the French reinforcing batteries of 75's were tractor drawn and tractor carried. A lorry carried one gun complete and drew another.

These " Porte " batteries could cover 100 kilos in a day and bring the detachments quite fresh into action with 200 rounds of ammunition per gun. The chief drawback was that they had to keep to the roads and occupy positions along the sides of roads.

At the end of the war the American Artillery was approaching what they called motorisation as quickly as possible.

At present the calibre and weight of the field gun is decided by the limit that a six-horse team can pull. With mechanical transport the whole question of calibre can be reviewed afresh.

Besides expense the only limit appears to be the strengths of the road, bridges, and the number of vehicles to carry the ammunition and spare parts. After initial expense, mechanical transport is cheaper and requires fewer personnel. Tanks do not require constant grooming and exercising.

I might hazard a guess and say that at the end of the next war the rapid moving artillery, working with the Cavalry or Tanks, or in close support of the Infantry, will be field guns on armoured tanks and capable of firing off the tanks.

All other guns for barrage, etc., will be drawn into action unlimbered.

There are, of course, many difficulties to be got over first. Amongst others, reconnaissance, supply of petrol, etc.; but science will solve these problems too, very rapidly when the necessity is clear and expense no longer thought of.

All nations are experimenting. Our first M.T. Field Brigade, R.F.A., has just come into existence.

The French inventors are already busy. The French Higher Command think that the difficulty of hiding artillery horse lines is so serious as to compel this change to mechanical transport, even if there were not other advantages.

The increased scope of Artillery has necessitated a great increase in expenditure of ammunition. This is a big problem even in position warfare, where dumps can be formed and light railways laid.

But we have learnt that there is a great expenditure in moving warfare also. In this case the problem can only be solved by mechanical transport. Probably an almost unlimited supply of lorries, similar to the present 3-ton lorry, will be easily acquired in an industrial community; but such lorries do not fulfil all requirements.

Some at all events of the lorries must be able to go across country right up to the gun positions.

Conclusion.

The most important lesson of all is a very old one, but one which in the Great War was driven home to us all. And that is Artillery must be used in closest *liaison* with the other arms.

Though its *rôle* has become a greater one under modern conditions, the best can only be got out of it when it thoroughly understands and

is understood by the other arms. There is no mystery about the tactical employment of Artillery, and other arms must know its powers and limitations.

From the nature of the subject of this Lecture I have been forced to talk much about machines and implements of war and so I will conclude by quoting the words of the greatest Gunner of the present day, Marshal Foch:—

"Success will only be achieved by movement and manœuvre. The fighting of the future will be sometimes on positions, sometimes between positions, and sometimes purely in the open. The organisation of armies and their fighting methods will develop as machinery and material improves, but the principles will remain unchanged. *Morale* will always remain in war the supreme argument. The sound moral education of the soldier will always remain the chief factor of success and victory."

DISCUSSION.

BRIG.-GENERAL H. DE T. PHILLIPS: Mr. Chairman, Ladies and Gentlemen, the Lecturer, as he told us, had to omit many points owing to being much pressed for time. There was one point in which, I think, everybody is much interested at present. He talked of the great importance of aircraft in warfare, and I suppose every soldier has, at times, at the bottom of his heart, cursed the introduction of aircraft, from the point of view that operations involving secrecy or surprise must be conducted at night, which means much discomfort to all concerned.

We have all known in past years of the struggle of "guns *versus* armour," which has almost become a proverbial expression applicable to the principle that the latest development of one method or means must be countered by the development of something to oppose it.

Aircraft have undoubtedly done more to revolutionise warfare than any previous invention, and the great desideratum of the moment appears to me to be the concentration on some method or means that will nullify or minimise the influence of aircraft, whether in their *rôle* of observation or bombing or the possibility, of which we have read much in the papers but taken little notice of, of large numbers of aircraft, in flocks, transporting large numbers of men and dumping them down behind the enemy's lines. Well, I think a target of that nature could be easily dealt with by our existing guns of all natures and, in any case, the dumped force has either to maintain itself there or get away again, a matter of some difficulty.

In the late war even single aircraft were sometimes brought down from great heights by a single anti-aircraft gun. A flock about to alight ought to be easy to "brown." But we want something more to make it unpleasant for aircraft at all times. We want, to begin with, a weapon of very high muzzle velocity, and we must make a study of the different ballistics involved when shooting at very high angles of elevation. Our old assumption of the "fixed trajectory" is no good. The first thing, the high velocity gun, appears to have been already invented in America, by John Temple, and in some other country. Having got the gun we should concentrate on ballistics and devise a possible method of minimising the action of aircraft.

Another new development which has been successful is the tank, but how to find a certain method of destroying tanks I do not know. Yet, so far as we

have been predominant in that line, our possible enemies are probably busy studying methods of countering tanks.

Again, the lecturer mentioned trench warfare, and the preference expressed by all soldiers, at any rate in our own army, for the conditions of moving warfare. There is, however, one point in this connection to consider. In the late war, other nations learnt the possibility of the British raising a far bigger army than they imagined. In that respect our cards are now on the table. We raised and trained that army, without at once resorting to compulsory service, during the war.

I may be wrong, but I do not think we should have been able to wait for that army or train it nearly as efficiently had it not been for the period of trench warfare, which in this respect was a Godsend for us. Trench warfare has many objections, but I think other nations will grasp the fact that it enabled us to train a large army. As long as we only maintain a very small army and have no compulsory service, other nations will not want to give us an opportunity of improvising a similar army. It would, therefore, be in the interests of any enemy with a larger army to try and force an early decision by great pressure during the initial period of open warfare.

The lecturer also touched on the question of the re-amalgamation of the branches of the Artillery. He said he believed it was the opinion of the higher Staff of our army that it wasdesirable, and I think that nearly every gunner with whom one has discussed the matter is of the same opinion. He pointed out that heavy artillery will in future form a quarter of the artillery strength of any Expeditionary Force. This being so, surely makes the amalgamation of greater importance than ever before. The recognition of the value of heavy artillery grew, but grew slowly, after the South African War. One of the few lessons of the last Balkan War was the undoubted value of heavy artillery in battle. The Germans seem to have grasped the lesson, and took the field with a comparatively large strength of heavy guns, with the result that we started with a distinct disadvantage. As we shall probably start the next war with an increased proportion of heavies, I think an immediate amalgamation of the Artillery would bring about that perfect *liaison* within the Artillery which the Lecturer so rightly insisted on as being essential between Artillery and the other arms. I think that is all I want to say.

MAJOR-GENERAL W. H. ANDERSON (Staff College): Mr. Chairman, Ladies and Gentlemen, I am afraid I am called upon under circumstances which make it very hard to produce anything, but I have been rather pointed to as the Infantry soldier in the midst of the wolves of the Artillery. I should like to get on to a point affecting the Infantry now very closely indeed. It is a question whether the forward sections of artillery are near enough to the battalion commander of the Infantry who is responsible for some 800 men, and who may possibly be attacked by tanks when not immediately supported by artillery with whom he is in communication, and who may wish at once to have moral and material support for his own men. Does it not mean getting back to the battalion gun? Can that gun be manned by our Infantry? Is it sufficiently simple, or does it require Artillery personnel, that is, to give immediate support, not to a brigade commander of Infantry, but to a battalion commander of Infantry?

MAJOR-GENERAL G. D. JEFFREYS, C.B., C.M.G. (London District): Lord Horne, General Birch, and Gentlemen, I feel like General Anderson that I am among a distinguished company of gunners, and that a mere Infantry man is almost guilty of presumption in venturing to say anything; but as General Birch has called upon me, I feel it incumbent on me to get on my legs. I should like to say

how heartily I and every Infantry soldier will agree with the Lecturer in emphasising the necessity for greater *liaison* between Artillery officers and Infantry officers in the field. I believe, if I may venture to say so, that it was the greatest want in our pre-war training of any as regards mutual co-operation between the two arms. I do not think the average Infantry officer at the beginning of the war really knew anything of the methods and the tactics of the Artillery, and I think I might also say that the average Artillery officer knew almost as little of the tactics and the methods of the Infantry in the front line. I hope I am not libelling the Artillery in saying that. I think also (it is rather getting off the rails) that in our training in the future it will be a great thing if we remember that as we go on there is a tendency to create new arms and new branches of the Service which live in water-tight compartments and which are totally ignorant of the methods and the tactics and the ideas of the other branches. To my mind it was not only not a retrograde step, but very much the reverse, when the independent existence of the Machine Gun Corps was brought to an end, because if machine gun officers are not practical Infantry officers, in touch with Infantry thought and tactics, they are worth very little—the same applies, *mutatis mutandis*, to the relations between the Artillery and the Infantry. If they are not in the closest touch, if the Artillery officer does not understand Infantry tactics and ideas, and conversely if the Infantry officer is not in touch with Artillery methods of working and tactics, we shall never get the full co-operation in the field which we all know and all admit to be so essential. That is all I will venture to say on the subject.

General Lord Horne: General Birch, Ladies and Gentlemen, it had not been my intention to join in the discussion to-day, because I have on three quite recent occasions given expression to my views in this building. Leaving all technical subjects on one side, which no doubt will be commented upon by our Chairman, I think there are one or two points that come into prominence from this lecture. The first is the importance of research and experiment. We read of the necessity for economy and we all admit that necessity, but I note with very great regret suggestions that our schools of research and experiment should be cut down. Now, however small our Army may ultimately be, surely it ought to move with the times, and if it is small, it should be the very best equipped both in material and in scientific knowledge. The second point is a matter which I hope it is not wrong to refer to in connection with this lecture. This lecture must have impressed on those of us present that artillery and similar appliances for the assistance of the infantry have during the last few years assumed much greater importance than they ever had before. Is it not reasonable to think that that importance will increase as time goes on? Yet the shadow of the Geddes report is hanging over us. That report suggests that, because our auxiliary Arms are better equipped and are more scientific, therefore they should be cut down. The suggestion that because we have advanced in weapons and appliances, for that reason our Army should be reduced, runs through the Geddes Report. Are other nations, other possible enemies, not making equal advance in weapons and appliances? If we had carried out the principles of the Geddes Report, we should still be as in the days of the bows and arrows of Hastings or the men in armour of Poitiers or the muzzle-loader of the Crimea. I cannot follow the argument that because we are better equipped, that therefore we can do with less. Are our possible Opponents going to follow that line? I think that all those of us who have had practical experience of war should, as far as we can, point out the fallacy and the futility, may I say, of arguing on such lines as that. Perhaps I have gone rather beyond the bounds of what I should say at this lecture, but still as I listened

to Colonel Oldfield I could not help feeling that those who heard him to-day must have realised the importance of the auxiliary Arms and the importance of ensuring that they are maintained at their highest state of efficiency.

COLONEL OLDFIELD: Ladies and Gentlemen, with regard to the question of Anti-Tank defence referred to by General Anderson, I had something to say which got rather crowded out for lack of time.

Officers in the Tank Corps contemplate three different types of tank. First, the fast independent tank, which has hardly as yet come into existence; secondly, the transport tank; and, thirdly, the slow moving 5-miles an hour tank which moves with the Infantry and may be taken as a form of Infantry—in fact, as armoured Infantry soldiers for attack purposes.

Of course no Gunner likes the idea of his guns being dotted over an area in case the enemy attacks with tanks. On the other hand no doubt guns that are suitably sited will be always used, and will be the deadliest enemies of the tank.

Looking into the future I foresee some form of shoulder weapon being the natural usual weapon against the tank. That shoulder weapon would be with each Infantry Battalion, manned perhaps by the members of the Tank Corps if Infantry think they already have too many different weapons to carry.

To make Anti-tank defence the job of the Tank Corps would appear to be the most satisfactory solution of the problem.

THE CHAIRMAN: Ladies and Gentlemen, it is left for me to sum up. Nobody wants war, in fact everybody hates it, but it is the duty of the soldier directly one war is over to think of how to defeat the King's enemies in the next. The Great War saw the development of two new Arms (as this is a gunnery lecture, I do not apologise for talking gunnery shop) and in them the appearance of two principal targets for the artillery; one the aeroplane, the other the tank. There are some people who now go so far as to say that in the next war there will be nothing but tanks and aeroplanes. I do not believe it; we shall have more machinery, but no war will ever be finished with tanks and aeroplanes alone. I think that the battle of 8th August, 1918, gave us the best line of thought for the future, or rather the best line along which we may start thinking about the future; it was Lord Rawlinson's—the 4th Army's—battle. There we had more tanks than we had ever used before, conditions for their employment were favourable in every way, and we had unlimited ammunition. I had something to do with the gunning of that Army, as you know, and some of you will be surprised to hear that I could get enough field and heavy guns for it and could get the ammunition, but the anti-aircraft guns bothered me; I could not find enough. Poor General Budworth, whom some of you knew very well—I am sorry to say he has gone—wanted anti-aircraft guns for every advancing unit and he was not very far wrong.

Protection of our troops from the air and tanks are the two main gunnery problems that we can foresee at the moment. There may be many other ones before we go to war again. Then we come to the gun of the future. In France, when the war had been going on for some time, we asked for experiments to be carried out with what we called a gun howitzer (a weapon with many of the advantages of the gun and some of the advantages of the howitzer); to have this weapon with a split trail so that it had a traverse of about 25 or 30 degrees in order to deal with tanks, and with an elevation that would allow it to engage targets in the air. I am of opinion that we cannot go on with anti-aircraft artillery pure and simple, most of our guns in the future will have to fire an air barrage just as they fire a land barrage now. I know that there are mechanical difficulties and inventive difficulties, and so there were, for example, before wireless telegraphy

was a commercial possibility, but I believe that this is the weapon for which we gunners must work. Of course we have no money now, we shall probably not have any money until too late, but I think we ought to get on as Lord Horne said with experiment and design in the direction indicated. There was one other point the lecturer talked a great deal about—ammunition. I think the expenditure of ammunition is a point that all gunners ought to study very carefully; I could tell you facts about the demands for gas shell and smoke shell in France that you would hardly credit. You must remember the poor man at the dispensing end. If you demand in the field an over-proportion of anything, you will lessen the supply of necessary things; it is a very serious thing changing a manufacture of any sort, especially when you have the organization for it in full swing. We are not allowed to talk politics by the Rules of this Institution, but I would like to say one thing about 1918, which I do not think has ever been said in public before; that is, that we owe a tremendous lot to Mr. Winston Churchill for the way in which he made our ammunition expenditure and our gun expenditure possible in that critical year. He did a great deal towards winning the artillery battle. He certainly shortened the war; he put his priceless energy and his great brain power into Artillery supply and his " drive " made an enormous difference. When you got an expenditure of 24,000 tons of ammunition in 24 hours, to put it mildly, you are apt to strain resources. The lecturer remarked that nobody thought of cutting barbed wire by shell-fire before this war. I cannot make out why we did not; barbed wire had been used in Bulgaria, Serbia and Japan, but the business of cutting it by means of artillery fire never seems to have been taken up. One other remark about tanks. We are on the top of tanks in the artillery at the moment because tanks are not shell proof. When they are made shell proof they will become slow and we shall still have armour-piercing shell to destroy them with. In asking you for a vote of thanks for the lecturer I may say that I rather spoilt his lecture by telling him that it might be too long, and he left out a very interesting part on counter battery work. He said he could have talked for over an hour on this subject alone, and I am sure very well. I would now ask you to pass a vote of thanks to the lecturer for a most interesting lecture.

The resolution of thanks was carried by acclamation and the Meeting then terminated.

THE ANTI-BOLSHEVIK MOVEMENT IN SOUTH RUSSIA, 1917–1920.

By Lieutenant J. N. Kennedy, M.C., R.A.

I HAVE endeavoured, in the present paper, to fulfill a twofold object—firstly, to write, in outline, the story of the Anti-Bolshevik movement in South Russia from its inception in 1917 up till its close in 1920, and, secondly, to set down some record of personal impressions gathered during a year's service with the British Military Mission which was attached to the armies of Denikin and Wrangel.

It should be explained at the outset that the political has intentionally been subordinated to the military aspect of the subject, and has necessarily been dealt with in a somewhat cursory fashion. In view of this, it should be stated here that much of the adverse criticism which has been levelled against British policy in Russia during the period under review is unfounded and unjust. When the full history of the Anti-Bolshevik movement comes to be written, it will be seen that our situation as a foreign Power intervening in a Russian civil war was an extremely difficult one. The problems with which we were faced were by no means simple, and our actions can be properly judged only in the light of circumstances and events which are not yet generally known.

I would here acknowledge my indebtedness to the following sources of information :—

Official Despatches.

The publications of the Russian Relief Committee.

"With the Russian Armies, 1914–1917," by Major General Sir Alfred Knox.

The opinions expressed in this article are, of course, personal.

Some months before the end of Kerenski's *régime* it had become apparent that Russia would conclude a separate peace with Germany.

The Soviets which had sprung into existence all over the country were undermining the power of the Government and, as a result of their influence, the Army had become disorganised. The notorious "Order No. 1" will be remembered, which deprived officers of their authority and set up committees of soldiers in their place. In consequence of this and similar measures, discipline ceased to exist and, during the summer of 1917, the Army melted rapidly away, the soldiers deserting and returning to their homes by the thousand.

Germany was meanwhile doing everything in her power, by propaganda and other means, to assist the processes of disintegration.

In short, by the autumn of 1917, when Lenin seized the reins of government, Russia had practically ceased to exist as a military Power.

It was at this stage that the Anti-Bolshevik movement in South Russia was initiated.

The movement owed its inception to General Alexiev, a soldier whose sterling qualities had led to his appointment in 1915 as Chief-of-Staff to the Czar and virtual Commander-in-Chief of the Russian Armies.

After the 2nd Revolution, Alexiev had been thrown into prison by the Bolsheviks; but in November, 1917, he escaped and succeeded in making his way to Novocherkask, in the territory of the Don Cossacks. Realising that the situation of his country was rapidly becoming desperate, he there set himself to organise an army with which to oppose the rise of Bolshevism and continue the war against Germany.

His first step was to form what was known as the " Party of Collection." He was aided in this work by Generals Kornilov and Denikin, and by a number of ex-Ministers, amongst whom was Rodzianko, late President of the Duma.

The Cossacks of the Don were at first in sympathy with Alexiev's movement. Unlike the peasants in other parts of Russia, they owned their land in return for military service, and the Bolshevik cry of " State-ownership of all land " did not appeal to them.

Their sympathy, however, was not long-lived, for they were seduced after some months by Bolshevik propaganda. Lenin promised that, if they would join him, they would be allowed to keep their land and would be freed from their old obligations as political police. In February, 1918, the Cossacks agreed to these conditions, and, having accepted a large bribe from the Bolshevik Government, they turned against Alexiev and forced him to evacuate Rostov and Novocherkask and take to the steppes.

Alexiev's force was, at this time, some 3,500 strong, and it was composed almost entirely of officers of the old Army.

Alexiev now determined to march southward on Ekaterinodar, the capital of the Kuban, believing (erroneously as it turned out) that the Kuban Cossacks would rally to his banner. He also hoped to effect a junction with the British forces in the Caucasus and on the Caspian.

It has been said that the First Kuban Campaign of the Volunteer Army, as Alexiev's force had been christened, would compare with anything in history for sheer gallantry.

The Volunteers were insufficiently equipped and, for arms and ammunition, they had to depend entirely upon what they could capture from the enemy. In spite of these disadvantages they fought their way, in the face of considerable opposition and in the dead of winter, from the Don to the Kuban River, a distance of some 200 miles. There were three engagements of a desperate character, but the fighting was, for the most part, of a guerilla type. Casualties on both sides were severe and Alexiev's men also suffered heavy losses from an outbreak of typhus.

The Volunteers arrived before Ekaterinodar on 26th March, 1918,

by which date their numbers had been reduced to 700, and they proceeded to attack the town. The defenders, however, outnumbered them by three to one and were strongly entrenched, so that they had no difficulty in beating off the assaults of the Volunteers.

In one of these assaults General Kornilov, who had been acting as military Commander-in-Chief under Alexiev, was killed by a stray shell, and General Denikin was appointed to succeed him in the command. The latter decided to give up the attempt to capture the town and to extricate what remained of his force. He thereupon withdrew, with great skill, to the northward, and, taking his wounded with him, he reached Sredni Egorlak, on the border of the Don territory, by the middle of April. Here reorganisation was undertaken.

By this time the Germans, having forced the Treaty of Brest Litovsk upon the Bolsheviks and signed a separate peace with the Ukraine, were in military occupation of the Crimea, the Ukraine, and the important industrial area of the Donetz basin.

The Don Cossacks were now beginning to tire of Bolshevism. Perceiving this, the Germans came forward with an offer of assistance towards forming a separate Cossack State. This offer was accepted, and German arms and money were at once poured into the Don.

In pursuance of their policy of " Drang nach Osten " the Germans next attempted to come to terms with Alexiev, whose force was now the only obstacle to the opening up of a corridor to the East. Alexiev, however, refused to deal with them and held firmly to his watchwords of " No separate peace with Germany, no compromise with Bolshevism, a united and indivisible Russia." Alexiev's constancy to the Allied cause is the more to be admired in that Germany's prestige was, for the moment, very high in Russia owing to her successful spring offensive in France and her recent defeat of Rumania.

By the month of June, 1918, Alexiev had reorganised his force and, with 11,000 men, he once more took the field. He decided to make a second attempt to clear the Kuban of Bolsheviks and to establish a base on the Black Sea.

The Second Kuban Campaign was a very different affair from the first, for it was almost in the nature of a triumphal progress. A wave of re-action against Bolshevism had passed over the country and, not only the Kuban Cossacks, but large numbers of the regular Bolshevik forces as well, came over freely to join Alexiev.

By November, 1918, the Volunteer Army had increased to some 50,000 men; enormous quantities of military stores had fallen into their hands; and a base had been established on the Black Sea at Novorossisk.

Alexiev died on 25th September, and so he did not see the fruits of his labours.

General Denikin, who up till this time, had been military commander only, now succeeded to the leadership of the movement and was given supreme political power. Denikin had had a distinguished career in

MAP X
COSSACKS
URAL
CASPIAN SEA
TEREK
Approximate Line Held Oct 1918
do June 1919
do Oct 1919
TEREK AND DAGHESTAN ARMY
CAUCASIAN ARMY
VOLUNTEER ARMY
DON ARMY
DON
STAVROPOL
KUBAN
BLACK SEA
SEA OF AZOV
CRIMEA
KIEV
UKRAINE
RUMANIA
LITHUANIA
POLAND
AUSTRIA
MOSCOW
BLACK SEA

the Russian Army. He had been a successful Corps Commander against the Germans and later he had served as Chief of Staff at G.H.Q.

The collapse of Germany in November, 1918, naturally had a most inspiriting effect upon Denikin's Army.

The Dardanelles having been thrown open, the Allies were at last able to get into touch with him, and a British Military Mission arrived at his Headquarters in the Kuban in December. On receiving the report of this Mission, the British Government undertook to send out arms and equipment sufficient for 250,000 men and the French also promised help.

Under pressure from the British Military Mission the Don Cossacks now relinquished their separatist ideas and acknowledged Denikin as Commander-in-Chief of all the Anti-Bolshevik forces in South Russia—which was a great step forward. The forces under Denikin's command were thereupon re-christened the " Armed Forces of South Russia."

Supplies began to arrive in the spring of 1919 and the work of re-arming Denikin's troops was begun.

The effect of British assistance, both moral and material, was magical. The Bolsheviks were driven back everywhere, and Denikin's Army swept forward through the Donetz basin and into the Ukraine.

By the middle of June Denikin's forces had been organised in four armies, comprising in all some 200,000 men. These were disposed as follows :—

> The Terek and Daghestan Army (General Erdeli) advancing to strike the Volga north of Astrakhan, the Caucasian Army (General Wrangel) advancing on Tsaritsin, the Don Army (General Sidorin) advancing on Voronejh, and the Volunteer Army (General Mai-maievski) directed upon Kharkov

The line at this time is shown on Map " A."

Denikin now attempted to push forward his right wing to the line Saratov–Tambov–Voronejh, pivoting on the River Dnieper, and he hoped to join hands with Kolchak, who was advancing from Siberia. His hopes, however, were never realised.

By the late summer of 1919 the Armies were extended on a front over 1,000 miles long, and a policy of consolidation was recommended to Denikin by his advisers. He did not feel secure enough, however, to adopt this course. There was much discontent amongst the civilian population behind the Army, owing to the fact that the commercial life of the country had not been re-established, and many adverse political influences were also at work. Having this situation in view, Denikin felt that it was only by continuing the offensive that his army would hang together. In this appreciation of the case he was justified by the previous experience of Admiral Kolchak, whose attempt to halt long enough to train fresh levies before continuing his advance in Siberia had ended so disastrously.

At this period I paid a visit to the front of the Volunteer Army, and some account of my experiences may be of interest.

I had been assigned for duty to the 1st Corps of the Volunteer Army, which was operating at this time in the vicinity of Kursk.

On my way up to the front I spent a few days with the Corps Headquarters at Kharkov, where I made the acquaintance of General Kutiepov (the Corps Commander) and his staff. The Headquarters Staff struck me as being very much out of touch with the troops at the front. They were, in fact, over 100 miles behind the line at this time, and from such a distance it must have been impossible to co-ordinate the action of their command. Visits to the fighting troops seemed to be almost unheard of.

Whilst at Kharkov I was invited to accompany the Inspector-General of Artillery on a formal inspection of a battery which had just been armed with British 6-inch howitzers. The Inspector General was attended on this occasion by his adjutant and a bodyguard of half-a-score of wild-looking Cossacks armed with lances. When the usual salutations had been exchanged, the battery wheeled into column and cantered past the saluting base with much flourishing of swords and shouting. The gun teams consisted each of ten wretched little Cossack ponies and it was amazing to see them move the heavy howitzers at such a pace. We next saw some drill which was remarkably smart. The General then ordered his bodyguard to make a sham cavalry charge upon the battery and, as the Cossacks galloped down upon it, the guns were unlimbered and brought into action very creditably.

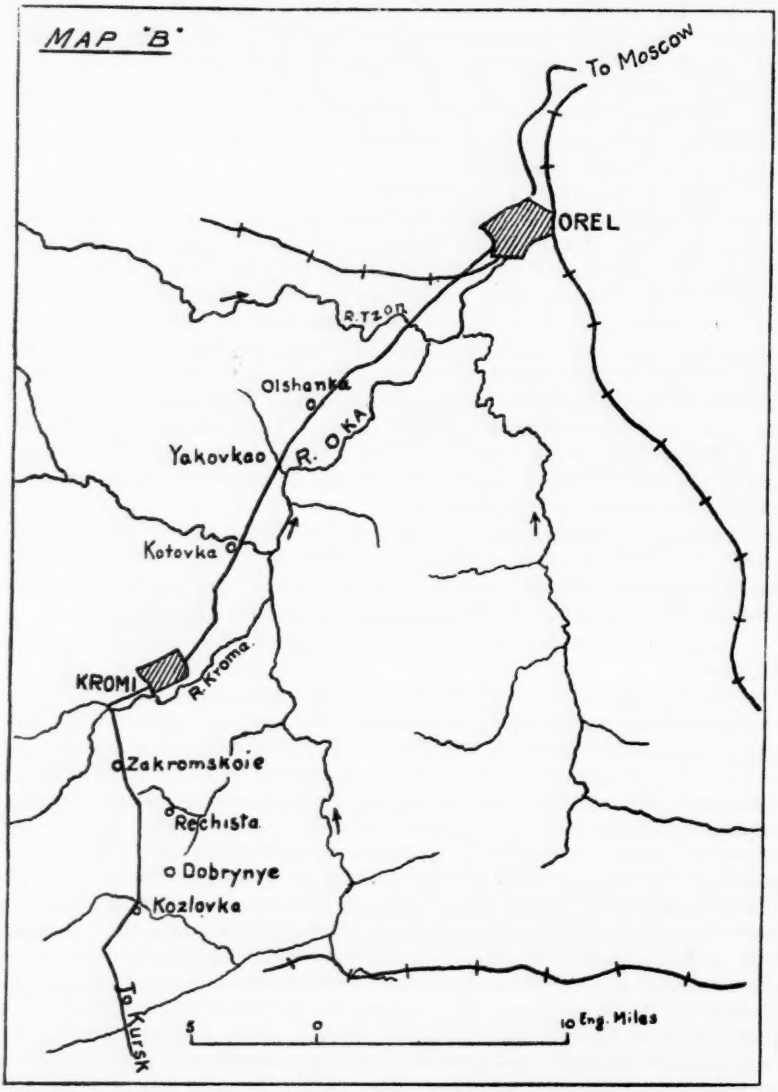
After the inspection we partook of a barbaric meal with the battery officers, at the conclusion of which we were all, the General included, tossed in the air several times in accordance with the Russian custom. This, by the way, cannot be recommended as an aid to digestion !

On 26th September I set off for Kursk, which had been captured some days before.

During the journey to Kursk, as on my previous journey to Kharkov, I remarked an extraordinary congestion of passenger traffic on the railways. Not only was every railway carriage and truck crowded almost to the point of suffocation, but passengers also travelled on the roofs and footboards of the trains. At the larger railway stations it was only with considerable difficulty that one could make one's way through the waiting rooms and across the platforms, for these were crowded with hundreds of peasants who were camping out there whilst awaiting the arrival of trains. These peasants were travelling between the country districts and the towns in order to sell flour, which they carried with them in sacks. As may well be imagined, this primitive method of trading entailed a very uneconomical use of rolling stock, and re-acted seriously upon the system of military transportation. The reason for the retail traffic in flour was that the local governments in South Russia would not approve of the movement of grain in bulk outside their own boundaries, partly because supplies were nowhere abundant and partly because prices were too unstable for regular trade. This state of affairs was one of many indications that Denikin's administrative measures were inadequate.

I spent some days at Kursk in order to visit units in the vicinity.

Here I heard some details of General Mamontov's famous Cavalry raid of the preceding August. Mamontov (who, by the way, was



said to have been a keen hunting man before the war and master of a pack of hounds at Moscow) broke through the Bolshevik front at Makarovo

with a Cavalry Corps of Don Cossacks and penetrated many miles into enemy country to Tambov, which was the main supply depot of the Bolshevik Southern front. He captured 10,000 prisoners, disarmed double that number of Bolshevik conscripts, and recruited two infantry divisions which he added to his force. Being hard pressed on one occasion he buried his guns and converted the drivers into cavalrymen. These guns were subsequently dug up again when the Army advanced. Altogether Mamontov was behind the enemy's lines for about a month; but this operation, which might have achieved considerable results, degenerated into a looting expedition. Mamontov failed to carry out his mission, which was to destroy the enemy's communications, and in particular those of the 8th Bolshevik Army. This Army, owing to Mamontov's disobedience, was able to make an advance on Kupiansk which seriously hampered Denikin's offensive. The conduct of the Cossacks on this occasion had a considerable influence in alienating the people from Denikin's cause.

At Kursk I met General Shkourov, a young cavalry leader who had achieved considerable distinction by his reckless daring in the earlier stages of the campaign. In appearance he was like a shaggy little peasant. His conversation was somewhat amusing—he spoke, for instance, of "building up a new Russia on the stinking corpses of the Bolsheviks"; he also remarked that he had heard there were some Communists in England and that he would like to come here after the war was finished and show us how his Cossacks could deal with them. As a Cavalry Corps Commander he degenerated rapidly and fell into dissolute habits. He encouraged looting in order to retain his popularity—with the usual results. Finally he was dismissed from his command and disappeared into obscurity.

I left Kursk on 9th October and, having travelled by motor-car a distance of some 60 miles along the Moscow road, I arrived late at night at the little village of Kozlovka.

It was by the merest chance that I discovered this village to be almost in the front line, for, as we were passing through it in the moonlight, I caught sight of some guns in an orchard and, on enquiry, I found that I was in the most advanced positions of the 2nd Kornilov Regiment. But for this we might have driven unchallenged into the enemy's lines, for I had been unable, before leaving Kursk, to get exact information as to the position of the troops.

I was given quarters in a cottage and turned in at once on learning that the advance was to be resumed at an early hour next day. An Artillery Colonel billetted in my cottage insisted upon my taking the only available bed, whilst he slept upon straw scattered on the floor.

On going out just before dawn next morning I observed that most of the men had been sleeping on the ground all night without any covering beyond their great coats, although the temperature was at this time several degrees below freezing point. They were now bestirring themselves and crowding round great bonfires to warm their stiffened limbs.

By 5.30 a.m. the light was sufficiently good for observation, and I rode up to the crest of a neighbouring ridge in order to see the enemy's position.

This consisted of a line of rifle pits dug along the further side of the valley and at right angles to the road. The country was open, rolling steppe-land, a very small portion of which was cultivated, and there was little or no cover anywhere. It was ideal country for military operations, being everywhere passable to all arms.

Our artillery had already opened fire, five batteries being engaged, viz. one 6-inch howitzer and two 60-pr. batteries, sited in the vicinity of Kozlovka, and two 18 pr. batteries in position further out on the flanks. The bombardment was continued at a slow rate for some two hours without any enemy movement being observed. At about 8 a.m., however, a score or so of the enemy's infantry bolted from their pits into the open and several of them were shot down by our machine guns which were posted on the slope below.

The enemy's artillery now made some reply and a howitzer of 6-inch calibre or thereabouts began to drop shells at a slow rate on the road near us. A battery of field guns was also active, searching and sweeping around the village.

At 9 a.m. a body of enemy cavalry, about 150 strong, appeared on the ridge in front of Dobrynye, about a thousand yards off, and galloped towards us extended in two long lines. Behind them followed a droshky. On enquiry I was told that a droshky was the usual means of locomotion of the Commanding Officer on such occasions. Our 6-inch howitzer battery opened fire and the first round fell just short of them. After a few more well-directed rounds had been fired, the Bolshevik Cavalry changed direction, rode off to the left and disappeared again behind the ridge, the droshky following at full gallop.

It appeared evident by 10 a.m. that we were faced by a small rearguard only and that the enemy's main body had withdrawn. An advance was, therefore, ordered and our little column was soon on the move.

First a small advanced guard moved ahead consisting of two armoured cars and a troop of 30 cavalry scouts.

A mile or so behind the advanced guard came the main body, the order of march being as follows—three "officer companies"[1] of the 2nd Kornilov Regt., the 60-pr. and 6-inch batteries, and then the transport, which consisted of several hundreds of country carts loaded with sheep and geese and driven by peasants. These country carts, I learned, were requisitioned in the villages and usually accompanied the troops for two or three days' march, after which they were replaced by others and sent home again. They were preferred by the Russians to limbered wagons for transport of artillery ammunition, for they were more mobile. The ordinary peasant's cart drawn by one horse will take 12 complete rounds of 60-pr. or 30 rounds of 18-pr. ammunition.

[1] These companies were entirely composed of officers of the Old Army and were amongst Denikin's best fighting troops.—J.N.K.

Behind the transport there followed a small rearguard of infantry.

About 2 miles out on either flank were flank guards consisting each of two Companies of Infantry and one 18-pr. battery.

The fighting strength of the column was about 2,000.

Between our column and the nearest troops operating on either flank there was an interval of about 20 miles.

After we had proceeded about 1 mile our advanced guard was checked by the enemy rearguard, which was holding a trench on the crest of a hill which commanded the road. The leading company of Infantry deployed and rushed it and the occupants of the trench were bayonetted. Their bodies were quickly stripped of clothing, of which our men were in need, and they were then left lying naked on the ground.

We now got a view of the Bolshevik force streaming away across country about three miles off. It seemed to be of about equal strength to our own, but, unfortunately, we were too weak in cavalry to take advantage of the situation. Their retreat was being covered by a 3-inch battery which had come into action against us in the open. A few rounds from one of our 6-inch howitzers caused it to limber up and gallop off.

At 5 p.m. the little town of Kromi was occupied and here some 200 prisoners were taken. These prisoners, who were mostly of the peasant class, were immediately sent as reinforcements to the batteries. I gathered that they were indifferent for the most part as to the side for which they fought. During the evening outposts were pushed out some two miles to the north of Kromi and the bulk of our force was billetted in the town.

As the only bridge across the River Kroma had been demolished, the artillery was parked in the little village of Zakromskoie on the southern bank.

Food supplies in the town were found to be scanty, bread being very scarce and such common articles as salt being practically unknown. There were numbers of geese, however, and these formed the staple food of the troops.

The inhabitants of Kromi and Zakromskoie received us well and manifested great delight at the departure of the Bolsheviks. The questions put to us by the peasants indicated an intense interest in Denikin's agrarian aims ; but these questions, I noticed, could not be answered very satisfactorily, for Denikin had not promulgated a definite land policy. This lack of policy was a grave error, for the idea naturally gained ground that he intended to restore their properties to the former landlords and to reduce the peasants once more to a state of serfdom. The consequent hostility of the peasants was a considerable factor in Denikin's downfall. There was a very evident need for propaganda amongst the peasant class as a counter to that of the Bolsheviks, but, although this need was repeatedly pointed out by British officers, no effective steps were ever taken to meet it. The absence of a due expression of the case for Denikin was much felt.

Evening reports showed that our total casualties in killed and wounded

amounted to 50. These casualties had been incurred for the most part in street fighting in Kromi.

The peasants worked all night to build a timber bridge across the river and early next morning (11th October) the guns were able to cross. This work of bridge construction was always very efficiently and quickly done by the peasants under the direction of the village carpenters. The bridges were of the ordinary crib-pier type.

No advance was made on the 11th as the division on our left had not come up sufficiently to protect our flank. In the evening, however, we heard their guns and learned that they were pushing forward, although stiff opposition was being encountered.

On the 12th we resumed the advance, but we did not establish touch with the enemy until the evening, when we came up with him near the village of Kotovka. He had taken up a position here along a wooded crest. There was an exchange of artillery fire, but nothing further occurred before darkness fell.

On the 13th the Bolsheviks again fell back and we pressed close on their heels. On reaching Yakovka we found the bridge across the river in flames. The peasants were still actually engaged in bringing up straw to keep it alight, as they had been ordered to do; but, on seeing us, they hastened to bring water to extinguish the fire.

The infantry were thrown across by a footbridge and in the course of a few hours the peasants had made a bridge to take the guns.

A mile or so north of this village we obtained our first view of the town of Orel,[1] which was our objective. The River Tzon, which flows round the southern outskirts of the town, was strongly held by the enemy and a sharp action was already in progress when I arrived.

The enemy's position was a strong one and had evidently been prepared with care, for it was entrenched and well wired. It was sited along a wooded ridge on the further bank of the river.

When I arrived the Commander of the 2nd Kornilov Regt. was driving about in an old droshky, amongst his most advanced troops. A map was spread upon his knees and he seemed to be quite oblivious of the shells which fell around him and of the machine gun bullets which whistled over his head.

A reconnaissance revealed what appeared to be a considerable gap in the enemy's wire entanglement at a point some 2,000 yards west of the main road and it was decided to attack here. Four companies of infantry, selected for the assault, were moved to the cover of a wood opposite the gap. Our field batteries presently opened fire on the enemy's position, the 60 prs. being employed on more distant targets, such as the railway station in the town itself. The 6-inch howitzer battery was moved up to support the main attack. I remarked that only one large scale map was available on this occasion and this had to be passed round to the

[1] Orel has a population of some 80,000 inhabitants.—J.N.K.

Infantry and Artillery Officers, who made sketches from it for their own use.

Whilst these preparations were still in progress a Cossack galloped up with a message from the 1st Kornilov Regt., which had been advancing along the railway on our right. This message requested us to stop our 60-pr. guns firing, as the 1st Kornilov Regt. was making an encircling movement round the north of the town and hoped to enter from that side.

Half an hour later this movement began to take effect and the enemy was seen to be evacuating his position along the river bank. But they were too late, for the 1st Kornilovs were already in their rear. Three thousand prisoners were captured, and four 3-inch guns were also taken. As regards the prisoners taken in Orel, the men were disarmed, deprived of their great coats and set free; the officers, I was told by the Commander of the 1st Kornilov Regt., would be shot, but I had no opportunity of verifying this.

Fighting continued in the suburbs of the town all night, but by 9 a.m. on the 14th Orel had been completely cleared of the enemy.

The capture of Orel had remarkable effect upon the *morale* of the Kornilov Brigade and indeed upon that of the whole of the Volunteer Army. Orel was regarded as one of the bastions of Moscow (it had been founded in the 16th century by Ivan the Terrible for the defence of the Grand Duchy against the Tartars), and now it seemed only a matter of days before Denikin's troops would march into the Bolshevik capital.

I was much struck by the cowed and broken appearance of the inhabitants of Orel, who had evidently suffered much during the Bolshevik *régime*.

A number of Jews and others, who were denounced as Bolshevik commissars, were summarily shot in the streets. Their bodies were left to lie on the pavements for days and were gradually stripped of clothing by the passers-by.

A certain amount of pillaging took place, but this was not general, and the behaviour of the Volunteer troops was good on the whole.

It was decided not to continue the advance next day as the Kornilov Brigade was now in a dangerously advanced position owing to the troops on either flank having been held up. A strong line of outposts was, therefore, pushed out all round the town.

On the 14th October I attended a review of the Kornilov Brigade, which was held in the town square. The troops on parade were the 1st and 2nd Kornilov Regts. (the 3rd Regt. being on outpost duty), and four batteries of field artillery. Col. Skobelin, the Brigade commander, had already arrived and was galloping up and down the line on a spirited horse shouting greetings to the men and receiving a chorus of deep-voiced answers. These preliminaries concluded, he addressed them and congratulated them upon the capture of Orel. A procession of robed priests now filed out of the Cathedral bearing banners and standards, and the chief priest proceeded to read a prayer for the continued success of Denikin's arms. (For this, I may remark in passing, he was executed by

the Bolsheviks when they recaptured the town a few days later.) He then proceeded to pronounce a benediction, sprinkling holy water over the bared heads of the officers as they crowded round. A march past concluded the proceedings.

In Orel there was a certain building which had been used by the Bolshevik "Cheresvecheka" as a prison and torture house. In the courtyard of this building we found the bodies of fifteen well-known civilians, who had been carried off as hostages by the Bolsheviks from Kharkov and other towns in South Russia. These unfortunate people had been shot just before our arrival in the town. Amongst them was Professor Besegen, of Kharkov University, whose son was accompanying me as interpreter. In the prison were fifteen more hostages still alive—amongst them two ladies. They were in a pitiable state of prostration as a result of the privations they had suffered. These survivors told us that they owed their lives only to the timely advent of the Volunteer troops, for orders had been given to shoot them all.

I was dining with the officers of the Brigade Headquarters on the evening of the 14th when a mud-stained horseman arrived with somewhat alarming news. He was a gun-team driver of a section of 18 prs. which had been delayed for some reason the day before and had been left to follow a few miles in the rear of the column. His news was that a force of Bolshevik cavalry, estimated at 2,000 sabres, had swept round our left flank, and had occupied Kromi, thus placing themselves astride our line of retreat. The two 18 prs. had been captured and he alone had escaped.

In consequence of this information the 2nd Kornilov Regt., with a battery of 6-inch howitzers, was given orders to march on Kromi at dawn the following morning with the object of re-opening communications. On the next day this Regiment marched to Kromi without encountering the enemy. The town was found to be unoccupied and the hostile cavalry was reported to have moved off in an easterly direction in the morning. Later it was ascertained that the manœuvre had been in the nature of a raid only and that the Bolshevik cavalry had ridden right round us and back into their own lines.

This completes an account of my visit to the Orel front, for I left on the evening of the 16th for Kursk.

With the capture of Orel the high-water mark of Denikin's advance had been reached. Bolshevik resistance now began to stiffen and he was held up all along the line.

There now followed a very critical time for the Anti-Bolshevik forces. The discontent of the civilian population was augmented by the continued weakness of Denikin's administration and by the failure of his efforts to enlist foreign assistance in the economic reconstruction of the country. Denikin at this time had little real authority over the various local governments in South Russia, and these governments were hopelessly corrupt and inefficient. Conditions of life under them were little better than they had been under the Bolshevists. Many armed risings took

place in his rear, one of the most dangerous of which was that headed by a peasant called Makhno, who attracted a very large following of malcontents and became a serious menace to the lines of communication. His cries of "Land for the peasants, no compensation for the owners, abolition of all authority;" and "Down with the Jews" were very popular amongst a certain class. In the Ukraine, Petliura continued to foster hostility to Denikin, and agents of the Soviet Government were active everywhere in spreading seditious propaganda. Discontent had spread to the Army and signs of disaffection were apparent. The ranks had been filled with conscripted peasants who were unwilling to fight and with large numbers of prisoners captured from the Bolshevists. The Cossacks, who had never fought with much enthusiasm outside their own borders, were getting tired of the war and they deserted in large numbers and went off to their homes to get the harvest in. Further, the situation had been aggravated by the Allies' evacuation of North Russia and by certain signs of an inevitable change of Russian policy in Allied countries.

This was the state of affairs when the Bolsheviks launched their counter-offensive towards the end of October, 1919. For this counter-offensive they had concentrated large numbers of troops, which had been withdrawn from the Polish and Siberian theatres, and they greatly outnumbered Denikin. Their plan was to deliver a heavy blow against each of his flanks at Kiev and Tsaritsin, to be followed by a main attack in the centre about Orel.

Denikin's army, being extended on such a wide front, was peculiarly vulnerable to these concentrated attacks. The attacks on the flanks were successfully beaten off at first, but, when the main effort developed against the centre, Denikin's situation became serious. This attack on the centre was made by two main groups—a cavalry group under Budenni in the Voronejh sector and a group of all arms operating from the direction of Briansk. The *rôle* of the cavalry group was to separate the Don and Volunteer armies and open the way for an advance to the Donetz coalfields.

Denikin hurriedly concentrated some six divisions to meet the threat, but it was too late and his efforts were unavailing. He had been outgeneralled and his troops were forced to fall back everywhere. Demoralisation set in and the retreat, once begun, could not be stopped.

By the 8th of January Denikin had been driven back to the line Sea of Azov–River Don–Astrakhan.

The complete separation of the Don and Volunteer armies was avoided only with difficulty, one corps of the latter succeeding in retiring on Rostov, while the remaining four divisions fell back on the Crimea.

Towards the middle of January a thaw set in which made all movement of troops impossible and delayed the end for some weeks. At its conclusion, however, the Bolsheviks again pressed their attack and broke through between the Caucasian and Don Armies.

Denikin's difficulties were increased by the defection of the Cossacks, some of whom, with characteristic perfidy, opened negotiations

with the Bolsheviks, whilst others, although refusing to submit to Soviet rule, would no longer fight against it.

A Bolshevik contingent now crossed the frozen Sea of Azov and threatened Denikin's left South of Yeisk, whilst Budenni, appearing on his right flank with some 15,000 sabres, attacked and drove his army back on the sea at Novorossisk. Here it arrived completely disorganised and little better than a rabble.

Denikin considered it futile to attempt to hold the naturally strong positions in the hills which surround Novorossisk in view of the utter demoralisation of his men. The task of evacuating what remained of his armies had, therefore, to be faced. This task was undertaken by the Allied Missions. All merchant ships sailing in the Black Sea under Russian and Allied flags were collected at Novorossisk and these, together with our own fleet under Admiral Seymour, took off some 35,000 troops on the 26th and 27th March, 1920. The embarkation was covered by the 2nd Royal Scots Fusiliers, who had been sent from Constantinople for the purpose.

The Crimea was still holding out, and the troops evacuated from Novorossisk were landed at Theodosia and Sebastopol.

A large contingent which was cut off from Novorossisk attempted to cross into the Crimea at Kertch, but the Bolsheviks had taken measures to block this line of retreat and they were surrounded and captured.

Considerable numbers of troops were driven into the Caucasus Mountains, where they continued the fight for many weeks, destroyers sent by us down the coast failing to gain touch with them. The majority of these eventually found their way into Georgia.

Some troops had also been evacuated from Odessa, which fell on 7th February, but the whole garrison could not be got away owing to the fact that the harbour was frozen. Those who were not evacuated made their way along the coast with the intention of crossing the Rumanian frontier; but the Rumanians, fearing they would stir up trouble in Bessarabia, refused to receive them, and they had to surrender.

The bulk of the Ural Army and a large body of refugees (mostly women and children) were cut off at Gurev. Attempts to embark them in boats of the Caspian flotilla failed owing to the presence of pack ice in the vicinity of the mouth of the river Ural, and they set out to march down the Eastern side of the Caspian to Fort Alexandrovsk, a distance of 500 miles. They suffered terrible hardships on the march from alternate blizzards and sandstorms, they were ravaged with typhus, and stragglers were cut off by the nomadic Kirghiz. Out of 5,000 who set out some 2,000 only reached their destination, and of these but a small number were able to cross the Caspian to safety.

It was now apparent to Denikin that he had lost the confidence of the Army, and he therefore relinquished the command in favour of General Wrangel on 4th April, 1920. He then left with his Chief-of-Staff, General Romanovski, for Constantinople. Here the latter was shot dead by a Russian officer half an hour after his arrival.

Although Denikin's efforts had ended so dismally, it is evident that he was at one time very near to success—to temporary success at least. How near we may judge from the report of a speech made by Trotski in September at a session of the Revolutionary Committee. In this speech he spoke of growing unrest and discontent amongst the peasants and stated that he feared a complete collapse of the Bolshevik Army.

Had Denikin's economic position been sound, his military operations could hardly have failed, in view of the superiority which the backing of the Allies had given him. His failure is yet another example of the fact that an Army must depend for its very existence upon a sound civil administration. It would have been a miracle had he achieved a lasting success, having regard to the chaotic state of affairs in that portion of Russia which was governed by him.

Whether he could have long maintained his position had he defeated the Red Armies and entered Moscow is open to considerable doubt.

Denikin himself was a great and single-minded patriot, but his gallant and devoted efforts were brought to nought by the corruption and inefficiency of a large proportion of his entourage. His council and his staff included many Russians who could not realise that the old *régime* had passed away for ever and who did everything in their power to obstruct all efforts at democratic reform.

Baron Peter Wrangel, who now became Commander-in-Chief of the A.F.S.R., was not a professional soldier. During the war against Germany, however, he had gained great distinction as a cavalry leader, and later, under Denikin, he had shown high qualities of generalship. He was by far the most capable of Denikin's Army Commanders, and he possessed the full confidence of the troops.

He now proceeded to reorganise what remained of the army in the Crimea, and he accomplished wonders in a very short time.

Repeated attacks were made by the Bolsheviks on the Isthmus of Perekop, but these were beaten off. It was not such a simple matter to defend this Isthmus as might appear from a study of the map. A great part of the Sea of Azov is still frozen at this period of the year and, on the western side, the Gulf of Perekop is so shallow as to be easily fordable in many places.

At this juncture the Allies attempted to mediate between Wrangel and the Bolsheviks with a view to getting the Crimea recognised as a separate State, but the negotiations came to nothing.

In April Wrangel undertook an advance into the cornlands of South Russia in order to secure supplies, for the resources of the Crimea had been exhausted by the needs of the Army and of the enormous numbers of refugees who swelled the population.

In the opening stages of the operations which now took place I paid a second visit to the front, of which a short account follows.

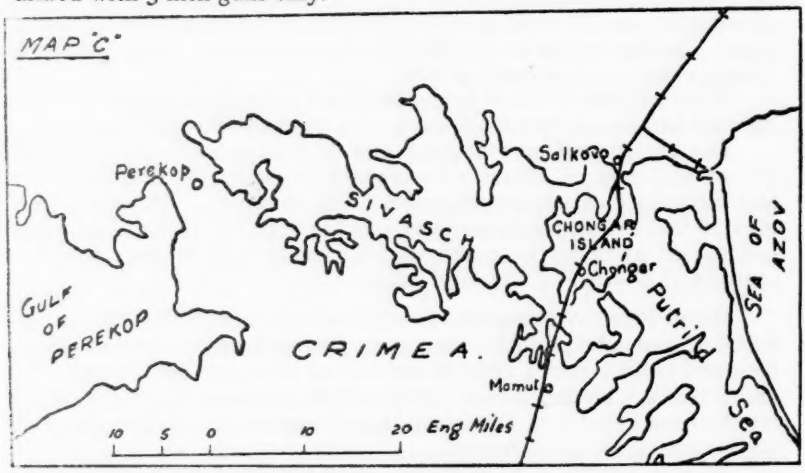
That part of the advance which I witnessed was in the island of Chongar, by which the railway crosses from the Crimea to the mainland.

An interesting feature of the fighting was the use of armoured trains,

As a result of what I saw I feel convinced that armoured trains have considerable potentialities in irregular warfare against an ill-armed enemy and that the method of their employment would, therefore, seem to merit some attention.

The force operating in Chongar Island consisted of some 500 infantry, three batteries of field artillery and two armoured trains,[1] one of which was armed with two 18-pr. guns and the other with a 60-pr.

The Bolshevik force was estimated at 800, but it was weaker in artillery and their armoured trains, of which they also had two, were armed with 3-inch guns only.



There was little or no fighting by the infantry, who advanced, as a rule, in line formation astride the railway in rear of the armoured trains. It was chiefly an affair of duels between the trains. Our armoured trains moved slowly ahead, keeping up a rapid fire on the Bolshevik trains, and engaging the enemy's infantry and field batteries whenever a favourable target presented itself. At times the trains on both sides were hit, but I never saw one derailed or severely damaged.

I was interested to observe the great moral effect exerted by the trains. It was evidently felt that field artillery was helpless against them. The country was flat and there was practically no cover of any description, so that whenever a battery came into action it formed a good target for the trains and was soon neutralised. It never seemed to strike the Russian gunners that the best way for a battery to attack an armoured train is to scatter the guns over a wide front and direct a converging fire upon it. The guns of the trains will then have more targets than they can deal with simultaneously and those targets will be small.

[1] The trains were made up as follows :—First a truck, upon which spare sections of railway line were carried, next the armoured gun trucks, and, behind these, the engine, also armoured.—J.N.K.

At one place a trench was held by the enemy on a low ridge which crossed the line of the railway at right angles. Our leading armoured train steamed up and opened enfilade fire along it at point blank range, with the result that a number of the enemy's infantry were killed or wounded and the remainder took to flight.

Just after this trench had been taken a rather amusing incident occurred. A halt had been ordered and the troops had lain down to rest, and several of us British officers (who were there merely as spectators) had walked out a short distance beyond the most advanced line of infantry in order to get a better view from some high ground in front. There seemed to be no danger, for we could see the enemy's column moving away in the distance and no shooting was taking place. We were, therefore, somewhat startled when all at once a machine gun opened fire upon us at close quarters. A Bolshevik armoured train had suddenly appeared from behind the buildings at the little railway station of Chongar near by, where it had been lying hidden, and was now steaming rapidly towards us. The eyes of all were upon us, and we felt we could not run, although we should have liked to do so, for the machine gun bullets were whistling unpleasantly close over our heads and there was no cover at hand. We, therefore, began to walk back in as dignified a manner as possible. At this moment, fortunately for us, our own armoured train sallied forth to our assistance and proceeded to shell the enemy train and drive it back. Before this encounter I had had rather a contempt for armoured trains, but I must now confess to a certain amount of respect for them!

By 18th April a bridgehead had been gained on the mainland round Salkovo, and here a line of trenches was dug which was to be held until the railway could be repaired.

On the 19th we walked round the front. From the men in the trenches we learned that during the preceding forty-eight hours they had had one hot meal only and, beyond this, they had had no food except raw salt herrings. In spite of this miserable treatment, which was entirely due to the inefficiency of the administrative staff, these men fought well that night and beat off a heavy counter-attack. The powers of endurance of the Russian soldier are truly marvellous.

During the operations we more than once saw General Slashchev, the Corps Commander. Slashchev was extremely popular with the troops owing to his great personal courage, but, unfortunately, his habits, like those of so many Russian officers, were dissolute, and he was addicted to drink. He was invariably accompanied on his visits to the front by one of his "lady orderlies" in male costume.

The British Mission was withdrawn from the Crimea at the end of June, 1920. Its functions had been to train and to advise, to inspect units armed with British equipment at the front, to keep the War Office informed of Denikin's requirements, and, latterly, to supervise the supply of all stores and equipment to the fighting troops.

After our departure Wrangel made a considerable advance into

South Russia, but in November the Bolsheviks concentrated against him and overran the Crimea.

The remnants of his Army were evacuated from Sebastopol to Constantinople, and so ended the Anti-Bolshevik movement in South Russia.

The main characteristic of the operations was their extraordinary mobility. The plains of South Russia favour free movement of troops everywhere, although there are but few metalled roads. Owing to the difficulties of supply, however, the main operations were confined as a rule to the vicinity of the railways.

The tactics employed have a certain interest when the operations are considered in the light of irregular warfare against an ill-armed enemy such as may recur in the small wars of the future.

It is a curious fact that, although the Russians have always been particularly strong in cavalry, and although the nature of their country favours mounted action, yet they have never mastered the principles of the employment of this arm. During the Great War it will be remembered that there were constant instances of the misuse of cavalry by the Russian Commanders, perhaps the most striking example of this occurring in Galicia in 1916, when the Russian cavalry were offered and failed to seize an opportunity, such as comes but seldom in war, of decisive action against the demoralised and bróken Austrian army.

The operations in South Russia were but a repetition of history so far as the cavalry was concerned. Cavalry, properly handled, would have been of the utmost value in cutting communications, for instance; but Denikin's cavalry was not properly handled and its power was largely wasted in raids which had no bearing on the main operations.

Golden opportunities for minor cavalry actions constantly occurred, but cavalry were seldom available to take advantage of them. This was chiefly due to the fact that Infantry Divisions were assigned an inadequate proportion of cavalry—insufficient even for scouting purposes. It would seem that for a campaign in a country such as Russia there should be, in addition to large cavalry formations, a greater proportion of cavalry in the Division of all arms and in the Army Corps.

Russian cavalry tactics are antiquated. For instance, they never, to my knowledge at least, fought dismounted, although the necessity for dismounted action might well have been impressed upon the Russians in the late war, if not by their previous experience in the Russo-Japanese War. There is no doubt that the Cossack despises dismounted action, and his value as a cavalryman is thus considerably decreased. The Cossacks, too, are robbers by instinct, and it seems unlikely that they could ever be trained up to the standard of first-class European cavalry. They are undoubtedly good horsemen and fine swordsmen and they have great powers of endurance, but they are easily depressed, and unreliable when things are not going well.

The Tartars, of whom a considerable number were fighting for Denikin, have perhaps greater potentialities as cavalrymen. They are

just as hardy, they are good fighting men, and they are more amenable to discipline.

A number of Mongols were also serving with Denikin's cavalry. They are especially hardy, and are said to be able to subsist entirely upon mares' milk, which is more nutritious than cows'. They are, therefore, independent of supplies and can move through uninhabited country with freedom.

As regards the Kirghiz, I understand from officers with a knowledge of Ind a that they would probably equal our finest native mounted troops if led by white officers.

The artillery of the A.F.S.R. comprised an extraordinary variety of armament, of German, British and Russian manufacture. Of the field guns the Russian 3-inch gun proved the most satisfactory weapon, and it withstood the wear and tear of the campaign better than the British 18 pr., which was constantly going out of action owing to the rough handling which it received. The carelessness with which the Russians handled their equipment was striking. Trifling defects were constantly disregarded and guns were kept in action until serious damage had developed. There was an enormous demand for buffer springs, the reason for this being that the batteries were frequent y in action at extreme ranges. The normal reserve supply of springs proved to be quite inadequate. In a country like Russia, where targets constantly present themselves at long ranges, a gun with a longer range than the old type of 18 pr. is clearly desirable.

Horse-drawn medium artillery was generally able to keep pace with other arms in operations, but the 6-inch howitzer proved to be greatly superior in mobility to the 60 pr. owing to its smaller weight. Medium guns and howitzers, when drawn by tractors, were found not to be sufficiently mobile. They were always held up at river crossings until heavy bridges could be constructed, with the result that they were seldom up in time to take part in the fighting. In retreat tractor-drawn guns were generally abandoned, even when there were no obstacles to movement, owing to their slow pace.

As regards horses, it may be noted that there is some difficulty in Russia in obtaining animals of a sufficiently heavy type for artillery. The ordinary Russian horses are small and the harness and shoes used in our Service were found to be much too large for them.

I was impressed by the advantages offered by the Russian system of grouping batteries in "divisions," which consisted, as a rule, of two batteries each. A number of "divisions" composed a brigade. For close co-operation with infantry in rapid movement this seems an ideal arrangement, and it would appear to lend itself equally well to co-ordinated artillery action in deliberate operations.

An interesting point which arose was the unsuitability for use in Russia of the buffer oil employed in the British service. This oil is liable to thicken and freeze in the winter to such an extent as to be quite useless.

The Infantry tactics employed in these operations were behind the times. The Russians seem to have stood still in the last war, while the Allies were developing new tactical methods, and they seem to have learnt little or nothing from their experiences on the German front.

Attacks were generally carried out in line formation with little or no depth, and in defence it was also evident that the modern idea of depth was not realised. At the same time it will be generally admitted that the depth of infantry dispositions may be considerably modified in less highly organised forms of warfare.

In attack Infantry were often moved forward against the enemy in horse-drawn carts, under cover of artillery fire.

The quality of the infantry regiments in Denikin's army varied enormously. Some were composed of peasants who had been mobilised against their will and who were unintelligent and untrained in war. They were naturally poor. Others, such as the Kornilov Regt., consisted largely of Officers of the old army who fought in the ranks, and these were as fine as any infantry in the world.

As regards machine guns, it may be noted that, in order to make them sufficiently mobile to keep up with fast-moving infantry and cavalry they were often lashed on light carts drawn each by four horses, and they were fired from this position. This expedient achieved its object.

The country is peculiarly suited to the unrestricted movement of tanks, for, with the exception of the rivers, there are no obstacles to movement south of the forest belt.

The tanks supplied to the A.F.S.R. were of the older patterns. Their moral effect was so great as to be almost magical, but lighter tanks, such as the " Whippet," would have been of greater value.

It is probable, however, that an enemy more accustomed to these weapons than the Bolshevik of that period would have been able to make an effective resistance to tanks by resolute handling of his artillery, because the complete absence of natural cover places the former at a considerable disadvantage.

Armoured cars were of great value and could have been effectively employed in far greater numbers. Armoured cars and cavalry were found to be an ideal combination which proved as efficacious as it did in somewhat similar circumstances during General Ironside's recent operations in Persia.

As has already been stated, experience in South Russia would seem to indicate that armoured trains have a considerable value in irregular warfare. Denikin also used them to some extent for the protection of his lines of communication, and it seems probable that for operations in a hostile country this should be a normal *rôle*.

The Air Force of the A.F.S.R. was perforce inadequate, and such work as was carried out was done, for the most part, by British personnel.

The aeroplane has undoubtedly tremendous potentialities as a weapon of offence on the open steppes and there were numerous instances of effective low-flying action against troops on the ground, the most

interesting occurring, perhaps, during the defence of Tsaritsin in the autumn of 1919, when repeated cavalry attacks were driven off by aeroplanes.

Aeroplanes and cavalry might have co-operated more closely. In this connection the failure to keep touch during Mamontov's raid may be quoted. On this occasion touch was eventually regained with Mamontov at Voronejh by means of De Havilands, but his whereabouts had been unknown for some weeks before.

The shortcomings of the staff were attributable not only to the poor quality of the average Russian Staff Officer, but also, in great measure, to the fact that the Command was very much out of touch with the fighting troops. Headquarters were, as a rule, too far from the front—for instance, Corps Headquarters were sometimes 140 miles and Divisional Headquarters 80 miles behind the line.

I was constantly impressed by the good fighting qualities and powers of endurance of the Russian soldier even at this time when the national *morale* was at a low ebb.

It is of interest to note that Lord Wolseley, writing of his service in the Crimean War, referred to the Russians as " about the finest infantry in the world—in fact fully as brave as our own "; and, again, as " the most stubborn of fighting men."

General Sir Alfred Knox, in his recently published book, " With the Russian Army, 1914–1917," makes some instructive observations on the Russian people as a fighting race. He points out that, although Russian peasants lack individuality and natural initiative owing to centuries of serfdom and low mental development, no attempts were made in the pre-Revolution Army to remedy these defects and to raise their *morale* by instilling into their minds a thinking patriotism. He emphasises the fact that the men are splendid material and that, owing to the rigour of the climate and his lower standard of civilisation, the Russian soldier is well fitted to stand privation and, with proper training, should be exceptionally capable of standing the nerve-strain of war.

One of the weakest points in the post-Revolution armies, as in the Old Russian army (although it was not fully realised before the war) was the officer element. The majority of the Russian officers proved themselves to be corrupt and inefficient. They lacked a sense of duty and they took no interest in the welfare of their men. Their attitude is illuminated by the following reference to one of his men made by an officer in my hearing: " He is a peasant—he is nothing! " Another advised me to treat my Cossack servant " like a dog " in order to get good work out of him.

Not until Russia can produce a good officer class or can call in officers of the right stamp from a foreign nation, will she, in my opinion, become a great military Power. No soldier responds more readily than the Russian to good treatment and good leading. Led by good officers the Russians would be accounted amongst the best troops in the world.

THE PROBABLE INFLUENCE OF AIR RECONNAISSANCE ON STRATEGY AND TACTICS.

By FLIGHT-LIEUT. C. J. MACKAY, M.C., D.F.C.

BEING THE GORDON SHEPHARD MEMORIAL PRIZE ESSAY FOR 1921.

" For a bird of the air shall carry the voice,
and that which hath wings shall tell the matter."
Eccles. x. 20.

PART I

I. THE IMPORTANCE OF INFORMATION.

THE collection of information about the enemy, which is obtained by efficient reconnaissance, ensures not only an essential part of the protection of an army, but forms also the foundation of all ideas and actions in war. Reconnaissances which are neglected or wrongly initiated are, on the other hand, productive of unforeseen situations, the results of which can never be retrieved, or at any rate only by means of great sacrifices. The enemy must be continuously sought out and constant touch kept with him so that the fullest information as to his whereabouts and intentions may be obtained.

It is generally supposed that success in battle is due to some marked advantage which one side possesses over the other—for example, Prussian discipline, the strategy of Turenne, or the French " seventy-five." Within proper limits such may be the case, but these examples stand forth because their influence on a campaign has been direct, overshadowing such factors as information, the influence of which is indirect. But it is the latter which is one of the primary factors of success, not merely a contributory cause as in the case of the former, for information is essential to both strategy and tactics—in fact to the making of plans. If he has superior information a mediocre commander may be able to meet a master of strategy on equal terms : to a skilful leader with good information anything is possible. The fateful combinations of Napoleon and the astonishing enterprises of Lord Peterborough were alike based on information ; trustworthy information for themselves, and no information, or that which was false, for their opponents.

It is now our task to consider the ways and means by which this all-important factor—information—may be acquired.

II. The Acquisition of Information—Past.

The acquisition of accurate information has always been one of the most difficult tasks of a commander in the field. In reading the history of a campaign and in criticising the dispositions and actions of a commander, how many students realise the difficulties which beset the subject of their criticism at the time? The commander in question had no book to show him the exact dispositions and movements of his enemy. All that he had was a book of his own compiling, edited in the fog of war—the book of reconnaissance; on the completeness and accuracy of that book hung his chances of success.

Prior to the advent of the aeroplane, information about the enemy was obtained by some or all of the following means:—

(*a*) Cavalry.
(*b*) Operations in force.
(*c*) Espionage.
(*d*) Prisoners and cross-examination of local inhabitants.
(*e*) Enemy Press and captured papers.

Cavalry.—In a first-class European war, cavalry are of little value for reconnaissance or for any other purpose; but elsewhere they are invaluable, both for reconnaissance and for rapid flanking movements, —witness the part played by the cavalry in Palestine and Mesopotamia during the late war.

In August, 1914, cavalry were expected to produce results no less important than in preceding European campaigns. This in spite of the fact that in 1904 Mischenko's cavalry left Kuropatkin in a continual state of ignorance, whereas the Japanese, who possessed only mediocre cavalry and therefore relied on other sources for information, were excellently served as to Kuropatkin's movements.

What was the result of this reliance on cavalry in the late war?

As will be shown later, both sides marched and counter-marched in a fog of uncertainty, the density of which has seldom if ever been equalled in previous operations of war. Gone were the wonderful reports of the Uhlans of 1870; their successors were confronted with the low trajectory rifle and the machine gun, the latter operating from a lorry or an armoured car. Their first intimation of the presence of the enemy was the crack of the rifle and their corresponding casualties. Nor on the Allied side did the cavalry reconnaissance meet with any better success. A French Cavalry Corps under General Sordet penetrated far to the eastward in Belgium without being able to send in any definite reports of the strength or distribution of the enemy's main columns, and on arriving in the neighbourhood of Mons, Sir John French had been told that he had in front of him "little more than one, or at most two, of the enemy's army corps, with perhaps one cavalry division."[1] The

[1] First Despatch from General Sir John French.

truth is the French cavalry encountered no great masses of opposing horsemen to be ridden down in thrilling charges. Instead they were met by rifle fire coming from they knew not where, fire to which with their light carbines they could make no effective reply.[1]

Reconnaissance in force.—The late war presents only one example of a reconnaissance in force, which is the operation of a large portion of the whole force against the enemy with a view to discovering his strength at any particular point. This type of reconnaissance has the disadvantage of being liable to involve a commander in a battle, almost decisive in character, to which he may be most unwilling or unprepared to commit himself. The example referred to above developed exactly this characteristic, involving the Turks in Palestine in a conflict which they had hardly anticipated and were unprepared to carry through. The Turks, however, at this period (1918) had almost entirely lost the use of the air as a medium of reconnaissance; consequently no other course was open to them.

Espionage, interrogation of prisoners.—These are methods of obtaining information which must always be adopted, no matter what other means are available. The former, particularly, provides information of a nature only attainable by this means.

Examination of Inhabitants.—The value of this source of information will be very largely influenced by the temper of the inhabitants of the country which is the theatre of hostilities. Before Sedan the Germans obtained considerable information of value given unwittingly by French peasants and others, but when Gambetta had aroused the passion of the French nation against the invaders, the German strategical operations were almost entirely based on guesswork, and large forces were marched off in wrong directions against a foe which was elsewhere, or which existed in imagination only.

The Press.—Press censorship has effectually quashed the value of enemy or neutral papers to combatants since the occasion on which the German General Staff discovered McMahon's movements to the northward towards Sedan through the columns of a London newspaper.

III. The Acquisition of Information—Present.

Though the value of the aeroplane in war may in certain *rôles* be a matter of dispute, there can be little doubt, even in the minds of the most conservative soldiers, as to its value as a medium of reconnaissance. To this latter it owes its original adoption in war. With its advent it was felt that at last it would be possible to see, what Wellington always wanted to see, "what was on the other side of the hill." It is the object of this paper to elucidate as far as possible to what degree the aeroplane has made this practical, and the best methods of achieving it.

[1] "Forty Days in 1914." Major-General Maurice.

The strategic movements at the opening of the war on the Western Front in 1914 produced two great surprises; one for the Allies and one for the Germans, namely :—

(*a*) The strength of the German flank attack delivered through Belgium.

(*b*) The appearance of the Army of Paris (6th Army) on Moltke's right flank before the Marne.

Both these betoken a lack of information on the part of the commanders surprised; it is our task to consider why aircraft, which were available, failed to keep their staffs informed as to the dispositions and strength of the enemy. (The reasons why the cavalry failed to furnish adequate information about the enemy have already been dealt with in Part II.)

In regard to air reconnaissance, the truth is that neither side appreciated the full value of aircraft, and consequently did not apply them in a manner which would permit of their acquiring information of value.

For example, the distance from their bases in France to the Meuse north of Huy, to which place, and to Liége, still further north, the German columns marched to cross the river, made it impossible for the French aircraft to keep up regular and sustained reconnaissance.[1] On the other hand, as the Allied forces fell back and the leading columns of the German advance came within the radius of action of aircraft, their true value began to be realised. It was in fact due to an air reconnaissance that the set back to the advancing Germans was initiated at the psychological moment. On that critical day, 4th September, 1914, when touch with the first German (Von Kluck's) Army had been lost by the French and British, the change of direction to the south-east by that Army was discovered by French airmen from Paris, whose reports were corroborated by the Royal Flying Corps. It was due to these reports that Gallieni at once warned the 6th Army to prepare to strike its blow.[2] Again, on the 9th February, 1915, it was an air reconnaissance which informed Hindenburg that the Russians were making preparations to withdraw their centre, its line of retreat being threatened by the advance of the right of the German 8th Army. At once Hindenburg put the centre and left of the 8th Army in motion, and, advancing rapidly, the enveloping movement (of which German strategists are so enamoured) round the Russian right was speedily accomplished.

In August and September 1914 situations arose, owing to ignorance on both sides, which would have been inconceivable if commanders had been properly supplied with information. Even allowing for the unreliability of aircraft in 1914, and for their limited radius of action, there is little doubt that such situations could not have arisen had the value of the aeroplane been fully appreciated and air bases been pushed sufficiently far forward.

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[1] " Forty Days in 1914." Major-General Maurice.

[2] " War Lessons, New and Old." Sir George Aston.

It was from General Joffre that Sir John French received the unexpected message at 5 p.m. on the 23rd August that at least three German Corps were moving on his position in front, and another was engaged in a turning movement from the direction of Tournai.[1] Again, on the morning of the 24th he was quite unaware that the 5th French Army had retreated, leaving his right flank exposed. How easily could these facts have been discovered by aircraft, provided such aircraft were operating from bases which would have allowed them the full use of their radius of action!

The ignorance of the German General Staff in regard to the movement of the British Army is almost incredible. On the 21st August, when they were within twenty-five miles of it, they laboured under the delusion that only a few British Cavalry regiments were in France and that the main force had not yet disembarked.[2] What would be their correct policy if war were declared again under the same conditions? They would at once push forward their fighting aircraft to obtain mastery over the advanced British air forces; they would then reconnoitre the Channel Ports, and would no doubt be in possession of photographs of the actual disembarkation; that is, if they had not rendered disembarkation almost impossible by heavy bombing.

Time and again during the retreat from Mons, Von Kluck had the two British Corps within his power, yet he did not seem at any time to have been aware of their true position. For example, on the 26th August he was busy bombarding the British trenches east of Caudry, when our infantry were already back behind Elincourt. Von Kluck relied for information on his cavalry, who were easily repulsed by our rearguards; and in consequence he learned nothing. General von Höppner, however, in his recently published book, tells us that German airmen discovered the famous sally of General Maunoury's Army from Paris during the battle of the Marne, and also the advance of the British Army from the line of Jouy-le-Chatel-Rozoy, thus revealing the great counter-offensive of Marshal Joffre.[3] If this is true it reflects credit on aerial reconnaissance and discredit on the ability of the German General Staff.

The Eastern front presented similar pictures of disaster which could have been avoided by the proper employment of aircraft. Samsanoff with two hundred thousand men marched straight into Hindenburg's trap at Tannenberg. An air reconnaissance on 27th August would have revealed the German movement of troops by rail to Allenstein round the Russian right.

Not only do the foregoing examples illustrate the necessity for accurate information, they also illustrate the fact that full use of the air was not made by commanders on either side, and that on the occasion

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[1] *London Gazette*. First Despatch from Sir John French.
[2] "Der Grosse Krieg in Einzeldarstellungen." German General Staff.
[3] "Germany's War in the Air." General von Höppner.

when circumstances had rendered reconnaissance by French and British aircraft possible, they made a discovery (4th September) which altered the whole course of the war.

There can be no better way of demonstrating the decisive influence which air reconnaissance may have on a campaign than by selecting some campaigns of the past, and visualising what would have happened had the commanders concerned obtained information by means of air reconnaissance; that is, if they had possessed accurate and early information. For this purpose the two following campaigns have been selected :—

(i) The Campaign in Thrace, 1912, which illustrates the possibilities of early strategic reconnaissance.

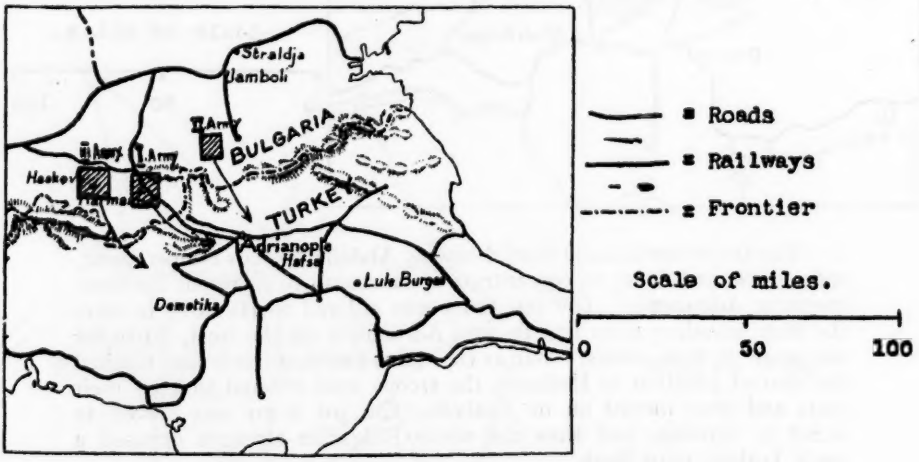
(ii) The Battle of Waterloo, 1815, which illustrates the possibilities of battle reconnaissance.

In following these two examples it will be necessary to describe—

(*a*) The information in possession of the commander at the time, and his consequent actions.

(*b*) The information air reconnaissance could have given him, and the action he would then have taken.

A. Abdulla Pasha's Information. 17th October, 1912.

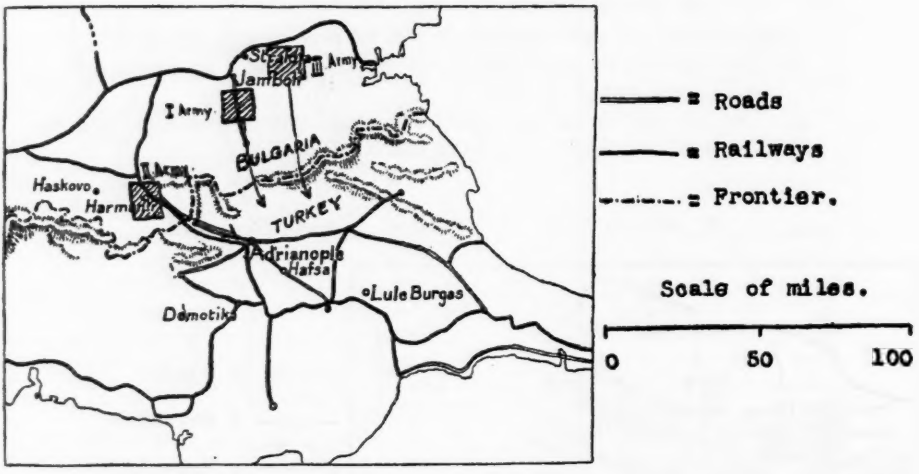


In 1911 the Turks held their first autumn manœuvres, and in a scheme devised by Von der Goltz, a Blue (Bulgarian) Army invested Adrianople, and two hostile Blue masses advanced on Constantinople, one passing Adrianople on the west, the other on the east, with the

intention of uniting somewhere about the line Hausa-Demotika and of advancing thence against a Red (Turkish) Army, which was concentrating to protect its capital in the neighbourhood of Lule Burgas. Abdulla Pasha commanded the Blue army on this occasion, and he commanded the Turkish Army a year later on the outbreak of war. He at once presumed the Bulgarians to be concentrating as in Von der Goltz's scheme, and made his dispositions accordingly.

Note.—The Bulgarian General Staff had studied Abdulla Pasha's manœuvres in 1911. They were aware that he commanded the Turkish armies opposing them, and they were aware of his mentality.

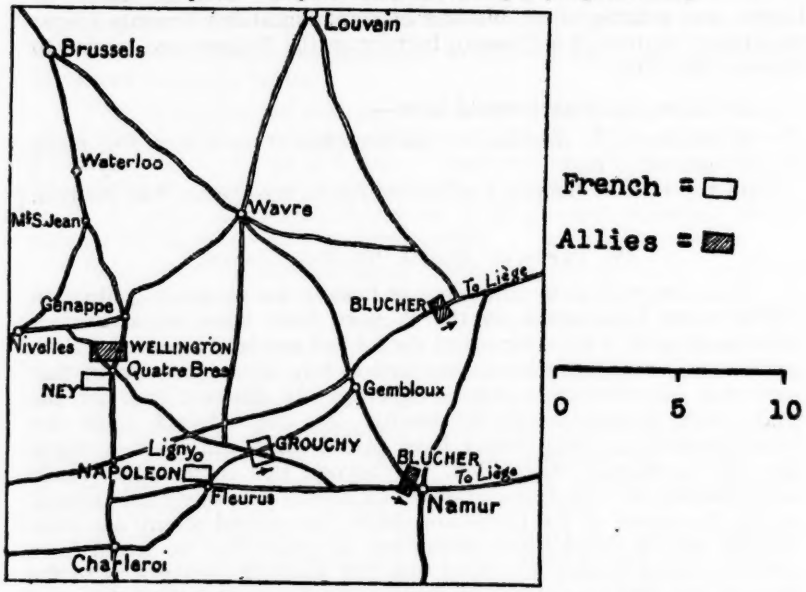
B. Aerial Reconnaissance. 17th October, 1912.



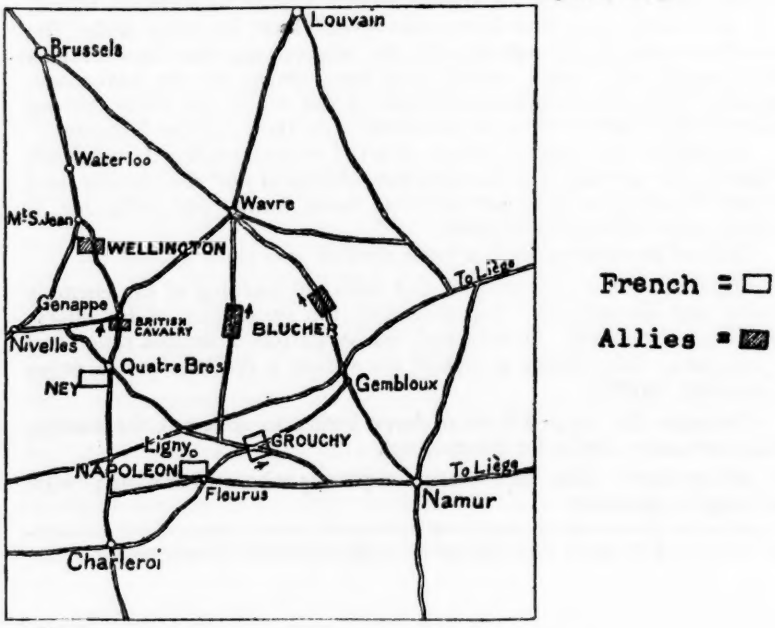
The Bulgarian General Staff, knowing Abdulla Pasha's temperament, ordered the 2nd Army to concentrate at Harmanli to represent the force investing Adrianople. The 1st Army was ordered to Haskovo to form the Blue invading mass due to pass Adrianople on the west, no secret was made of their orders. But as the trains carrying the troops reached the nearest junction to Haskovo, the troops were ordered to keep their seats and were moved on to Jamboli. The 3rd Army was moved in secret to Straldja, and thus the whole Bulgarian strength opposed a weak Turkish right flank.

The whole area of this concentration was under a distance of sixty miles from Adrianople, well within the radius of action of even an aeroplane of 1912. The Turks had two aeroplanes at Adrianople (which were subsequently captured), but they made no effort to use them.

A. Napoleon's Information.—Mid-day, 17th June, 1815.



B. Aerial Reconnaissance.—Mid-day, 17th June, 1815.



17th June, Napoleon believed that Blücher, after the battle of Ligny, was retiring along his line of communications towards Liège; the chance capture of a Prussian battery on the Namur road tended to confirm this belief.

Aerial reconnaissance would have—

(i) disclosed the direction of Blücher's march on Wavre, *i.e.*, north instead of east.
(ii) reported Wellington's withdrawal from the Quatre Bras position.

IV. Types of Aerial Reconnaissance.

It is of more than usual interest to imagine the astonishing situation which would have arisen on the Western front when static warfare introduced itself, if the conquest of the air had not been achieved. Both combatants would have been compelled to rely almost entirely on that somewhat untrustworthy source—espionage—to discover any but the most minor dispositions of the enemy. No doubt trench raids and reconnaissances in force would have placed units and given a vague idea of the enemy's disposition, but beyond this commanders would have laboured in a fog of uncertainty of a density previously unimagined. Again, the extent of the battle area under the control of any one commander (*e.g.*, a Corps Commander) was so great that he would have certainly found himself in a most unhappy state of ignorance as to the dispositions of his own troops and as to the progress of the battle, but for the form of internal air reconnaissance known as Contact Patrol. It is, of course, true that both sides would have laboured under the same disadvantages without aircraft; but who can say that the situations which would have arisen would have been always to our advantage, especially when it is remembered that on the whole the Allies derived infinitely more benefit from air reconnaissance than did the Germans.

In defining the different types of aerial reconnaissance it is difficult to denote the dividing line between the strategical and the tactical, and for this reason it is proposed to avoid these terms, and introduce, if possible, more distinct definitions.

Ground reconnaissance has been divided into three classes[1]:—

Protective.—The obtaining of just sufficient warning of the enemy's locality and his activities, together with the prevention of his efforts to obtain information. It is carried out by patrols of limited range and by outposts. The enemy is sought for within a limited area in order to preclude surprise.

Contact.—The employment of large bodies to seek out the enemy, and, if necessary, fight for information.

Independent.—The employment of patrols whose discretion is wide and range unlimited.

[1] "The Art of Reconnaissance." Major-General Henderson.

These three titles may be applied to air reconnaissance, but in applying them to the air they will define different types of reconnaissance.

Contact.—Internal reconnaissance to discover the locality of friendly advanced troops in battle.

Protective.—Limited reconnaissances, either to discover the enemy's whereabouts or his activities close to the front. These will normally be carried out by Corps and Army squadrons, visual being assisted by photographic observation in major warfare when aircraft are compelled to fly at great altitudes. This form includes what is known as the counter-attack patrol during actual battle.

Independent.—Reconnaissances ordered by the supreme command for special purposes far behind the enemy's advanced forces, *e.g.*, to watch the movement of his reserves, or, in the beginning of a campaign, to observe his deployment and line of advance.

To the foregoing must be added two subsidiary forms, no less important, but outside the scope of the former.

Counter-Battery Reconnaissance.—The study of the enemy's artillery activities by visual observation when his batteries are active; by photographic observations at all times. In open warfare photographic observation would play a less important *rôle.*

Survey.—The employment of the aerial camera to construct military maps of little known country over which operations are likely to develop; and special surveys by means of either oblique or vertical photography in order to assist the advance of tanks or infantry.

V. Advantages of Air Reconnaissance.

In static warfare it is not possible to draw a comparison between the air and other forms of reconnaissance by reason of the fact that no other forms exist.

The outstanding features of aerial reconnaissance are speed and radius, by means of which a commander, whose aerial forces have achieved superiority over the enemy, can discover within a few hours the dispositions and activities of his opponent over a wide area—an area so large that its exploration would have taken days by any other means, that is if it were at all possible. One of the most important factors in the supply of information is that it should be received by the proper authority as early as possible. A cavalry reconnaissance which might have succeeded in penetrating into enemy territory was often handicapped by its inability to send back in time the information acquired. In short, information concerning the enemy which arrives too late, is overtaken by events and is therefore useless. The aeroplane renders early information possible. In urgent cases a commander, by means of wireless, can receive the information immediately it has been acquired by the aeroplane; in campaigns against an enemy unequipped with wireless, or on the other hand by means of a code, information can

always be sent back in this manner with safety. Where two-way wireless is in use a commander can ask for and receive further information immediately, if the original wireless report does not supply sufficient detail. In actual battle this last development has big possibilities in simplifying control by the commander.

The whole of the enemy's dispositions are exposed to observation from the air and not merely the outer fringe of his protective troops; this latter is perhaps one of the chief differences between the old and new methods of reconnaissance. The occupation of false positions, the secret massing of reserves, and demonstrations against pretended objectives are not in the future as likely to deceive an adversary as in the past.

The campaign in Thrace in 1912 furnishes an apt example of the seriousness of a lack of air reconnaissance.

After the battle of Petra-Erikler (22nd–23rd October, 1912) the Commander-in-Chief of the Bulgarian forces ordered both the 1st and 3rd Armies to halt, while the cavalry was sent off to find the main Turkish mass. Thus touch with the Turks was lost by the victorious Bulgarian armies while the cavalry slowly and methodically pursued a fruitless mission, *for there was no Turkish mass.* Had the Bulgarian 3rd Army been ordered to advance at once on Constantinople, closely followed by the 1st Army, there is little doubt that the campaign in Thrace would have been finished in a fortnight.

Referring to this incident, Major Howell, British Military Attaché, says:[1]—" Here was the opportunity for aircraft. On the bare, open, rolling downs of Thrace nothing in good weather could remain hidden from an observer in the air. One or two successful flights by aeroplanes would have laid bare the whole situation; would have fully exposed the deplorable condition of the Turks; would have relieved General Savoff of any necessity to guess—and might therefore have changed the whole course of the campaign. The Bulgarians, however, had no aeroplanes."

It must not be supposed that the aeroplane cannot be deceived by stratagem. The running of empty trains and lorries to a certain part of the front may lead a commander to believe that enemy forces are being moved, which forces are not in fact in the vicinity. Attempts, however, to deceive with stationary objects such as the construction of empty encampments, dummy gun positions and trenches are unlikely to survive a close study of aerial photographs.

On the other hand the air can resort to a stratagem of its own in a manner likely to deceive an enemy. Thus, unwonted activity over a certain part of the area of operations may lead the enemy to anticipate attack where no attack is intended. Ashby adopted a similar form of deception very successfully when in command of the cavalry of Jackson's force in the Shenandoah Valley in 1862. On occasions when

[1] " The Campaign in Thrace." Major Howell, 1913.

he was left to his own devices, he employed his whole force on reconnaissance, seeking unnecessary information with simulated eagerness, protecting an imaginary army with pretended earnestness, and by these means enveloping his adversaries in a fog which was only lifted to show Jackson himself at the head of his battalions secure in the possession of every advantage which skill, surprise or stratagem could give.

VI. Disadvantages to which Air Reconnaissance is Exposed.

It may be argued that air reconnaissance is liable to interruption owing to adverse weather conditions. This is true, but all military operations are affected by adverse weather; in addition, bad weather will affect reconnaissance on both sides equally. Year by year the activities of aircraft are becoming less influenced by weather conditions; it may now be asserted safely that weather conditions which might preclude air reconnaissance are never likely to last sufficiently long to allow an enemy the opportunity for surprise.

The negative report supplied by air observation must be treated with reserve. An air observer may report that no enemy troops were seen in a certain village, but it is obvious that a commander cannot act on such information as if it were furnished by cavalry or infantry. In the first instance the enemy may be in the village but may have concealed himself successfully; in the latter case it is presumed that the cavalry have searched the village from house to house and the report therefore conveys definitely the absence of the enemy. In many cases during the late war aircraft were erroneously credited with the supply of inaccurate information, due entirely to a lack of discrimination between the positive and negative air report on the part of a commander.

In static or semi-static warfare the aeroplane is compelled to carry out reconnaissance beyond the battle area while flying at a great altitude: an altitude at which visual observation is useless, and at which reliance must be placed almost entirely on the aerial camera. The camera possesses the disadvantage that the area which it registers is comparatively small, but this disadvantage is more than balanced by the fact that in the area so registered no detail can escape the eye of the expert, who is in a position to examine the picture, undisturbed by those factors which are at times liable to influence the human mind in the presence of an enemy.

Aircraft in static warfare are compelled to seek information from great altitudes, not because they are incapable of obtaining it at lower altitudes, but because it is not only important for them to acquire information, they must also return with it as quickly as possible. The height lessens the chance of enemy interference. In contact reconnaissance, where visual observation is essential, all risks must be disregarded, and the work carried out at a minimum altitude.

VII. The Influence of Aerial Reconnaissance.

The immediate influence of air reconnaissance on the conduct of war may be summarised as follows :—

i. Reduces the inherent unreadiness of modern armies. A modern army corps occupies a road space of thirty-five miles, and takes thirteen hours to deploy—no small measure of unreadiness. The early information, however, which the aeroplane is capable of supplying, allows ample time for this deployment.

ii. Compels night movement of troops. "Night marches," said Blücher, "are more to be dreaded than the enemy." But now night marches are less to be dreaded than discovery. On the other hand it should not be forgotten that aerial night reconnaissance is in its infancy. In future wars night reconnaissance with the aid of powerful flares will reveal almost as much as by day, with the additional advantage that the observation can be carried out from a low altitude.

iii. Precludes the wide turning movement. Had aircraft then been so developed as they are now, and their application as fully understood, von Kluck's turning movement through Belgium would have been doomed at its inception. In the face of aeroplane observation the turning movement will in future be one of the most difficult operations of war.

iv. Precludes the possibility of losing touch with an opponent. It is true that in 1917, under cover of the mists of the Somme, the 5th Army lost touch with the retreating Germans for a few days, but only tactically on a limited front.

v. Supplies the commander with the only means of following, and thus controlling, the tactical development of the modern battle.

vi. Introduces the necessity for deception (or camouflage) many miles behind the battle front in areas hitherto considered immune from enemy observation.

vii. Facilitates the use of long range artillery, which with the aid of air observation can harass enemy back areas with accuracy.

viii. Renders the surprise factor more difficult to achieve.

The air has introduced the possibility of searching the enemy in depth for information, instead, as was the case with cavalry, of merely defining the contour.

VIII. Air Supremacy.

Not one of the foregoing advantages will accrue to the commander who does not at the outset make a determined effort to secure aerial supremacy, or some measure of aerial supremacy, over the forces of his enemy. In emphasising this point von Bernhardi says, "We shall not be able to carry out operations—reconnoitring for ourselves and preventing the enemy doing the same—unless we obtain such a domination

over the hostile aircraft that they are unable to perform their functions. The attacker must, therefore, obtain the mastery of the air just as he would try to reduce the enemy's cavalry to powerlessness."[1]

Thus, the aeroplane must fight for information as did cavalry in the past. Fighting, however, is mainly undertaken by a special type of aeroplane adapted solely to this purpose. This type secures that general supremacy in the air which will permit the reconnaissance aeroplane to carry out its duties with the minimum of enemy interference. The reconnoitring aeroplane must endeavour to avoid fighting, and should only fight when fighting is necessary for the obtainment of the information it has been detailed to secure. Such information secured, it is the duty of the reconnaissance machine to return to its base as speedily as possible, avoiding every encounter which might endanger the receipt of the information by the proper authority.

PART II.

IX. Naval Information.

In reading the accounts or histories of modern naval engagements, the predominant impression left on the mind of the reader is the surprising ignorance of the enemy's position and of his movements under which commanders laboured. Even in regard to the dispositions of his own forces the naval commander was often uncertain, as witness the action in the Heligoland Bight, 28th August, 1914.

Naval battles have hitherto been fought under conditions which it is difficult for the landsman to imagine. The latter can hardly visualise an engagement in which the commander is only vaguely aware of the strength and locality of his enemy; but then a military engagement does not take place between widely separated combatants moving at high speeds. A landsman, however, could give a reason, and a not inaccurate reason, as to why the naval engagements of the late war, with the exception of those with von Spee's squadron, bore that indecisive character which the traditions of Trafalgar and of the Russo-Japanese war would hardly have led one to expect.

That reason is—lack of information about the enemy.

To fight a successful battle, and it does not matter whether the battle is on land, on sea or in the air, a commander must know the enemy's locality, his strength, his dispositions, his movements and his losses. Without a knowledge of these, he will certainly not fight with success, and it is more than probable he will be defeated. The modern naval commander has not had all this information; in some cases he has not had any of it. It would, therefore, be safe to assert that the methods hitherto employed to obtain information are not a success; other means of obtaining information must be found. It is obvious that there is

[1] "The War of the Future." Bernhardi.

little use in spending vast sums of money in building gigantic battleships, if, when the occasion arises, these craft are unable to find the enemy in order to deal him the blow which their strength renders possible. Again there is little use in fitting these vessels with super long-range guns with which to open fire on the enemy at great distances, unless a means is found of bringing the fire of these great guns to bear on the enemy with accuracy.

The lesson of the biggest naval engagement of modern times is that the methods of reconnaissance and observation of fire then employed were inadequate; the aeroplane must be substituted for these methods. With adequate air observation it would have been impossible that the Grand Fleet should have passed over the spot where the retreating High Seas Fleet had been an hour previously and yet have been unaware of the proximity of the latter, as in fact happened immediately after Jutland.

X. The Acquisition of Information. Past and Future Methods.

As on land, information about the enemy is the foundation of all ideas and actions in naval warfare. Prior to the lessons taught by the late war it was assumed that this information could be acquired by :—

(*a*) Espionage.
(*b*) Cruisers.
(*c*) Submarines.

Espionage plays an even more important *rôle* in naval than in land warfare, for it was through the medium of espionage that the following was formerly discovered :—

i. The exact location at their bases of the units comprising the enemy's fleet.
ii. Information as to any subsequent changes.
iii. Departure and arrival of enemy submarines.
iv. Departure and arrival of enemy merchant vessels.

Prior to the advent of the aeroplane none of this information could be obtained by any but the above means, though submarines might furnish irregular reports as to the latter.

Cruisers were relied on to furnish information as to the strength and disposition of the enemy fleet at sea, especially immediately preceding battle; but their necessarily inferior armament limits their approach to the hostile fleet, with a consequent deterrent effect on the value of their information. In fact the cruiser was in very much the same position as that in which the cavalry found itself in the opening stages of the war, as explained in Part I., Section 2. It is not, however, intended to indicate that cruiser reconnaissance is valueless, but rather is it suggested that more detailed information can now be obtained far more quickly, and at less risk, by means of new methods—chief of which is

the aeroplane. Under certain conditions cruiser reconnaissance may still be necessary, but it would nevertheless be safe to assert that, granted efficient air forces are available, the energies of the light cruiser may be directed into more profitable channels, *e.g.*, commerce raiding, commerce protection, and fleet protection.

Submarines.—It has been said of the submarine that " it is the ideal sea scout, because it can evade the enemy's outer guard, and ascertain from close quarters his real inner strength or weakness; can wait and watch quite unknown to the enemy; and at the same time it can, if occasion offers, deliver an attack on the largest warship with reasonable chances of success."[1]

That the submarine has obvious advantages as a slow but certain medium of reconnaissance is beyond doubt, and if, as Mr. Domville-Fife suggests, it could make its observations unknown to the enemy, its value would be largely increased. But can the submarine make its investigations unobserved by the enemy anti-submarine reconnaissance aircraft? The same author admits in an earlier stage of his book that the most deadly enemy of the submarine will be the heavily armed aeroplane or seaplane. If this is true it is hardly safe to count on the submarine as a secret method of watching the enemy.

That the submarine can deliver an attack against the largest warship, while lying to off an enemy base, is also true; but this is a combination of offensive and reconnaissance duties which can also be done in the case of aircraft. Experience, however, teaches that such a combination of duties does not produce the best information, be it on land, on sea or in the air.

The chief objection to submarine reconnaissance is the slowness with which the information will reach its destination. Information, to be of value, must be early, and this the submarine cannot supply. It can, of course, report by wireless, but this reveals its presence to the enemy, and, in addition, the wireless range of a submarine is extremely limited. The present wireless range of the average submarine is one hundred miles—far too small a range to be of value, though on occasions it will allow a submarine to report information acquired at sea in the course of other duties.

Thus, though the submarine and the cruiser may still supply valuable information, it is certain that they cannot compete with the air as a medium of reconnaissance; consequently their energies should be mainly employed in other spheres, where they are likely to prove more useful.

The outstanding features of air reconnaissance are, as in land warfare :—

(*a*) Speed—Early information.
(*b*) Radius of action—Wide information.

It is true that the aeroplane is sometimes influenced by the adverse weather conditions so often prevailing at sea, but this is a factor which

[1] " Submarines and Sea Power." C. Domville-Fife.

affects all other forms of reconnaissance, though to a lesser degree. As regards darkness: the development of the parachute flare will render the aeroplane more and more efficient for observation purposes by night. The Americans have produced and used a flare of over 500,000 candle power which illumines an area of over five square miles. Thus, almost immune from hostile action itself by reason of the darkness above the flare, the aeroplane will be capable of accurate observation by night.

XI. Types of Aerial Reconnaissance.

Air reconnaissance in naval warfare may be divided into three categories, of which the first may already be reckoned as obsolete for reasons given below:—

i. Airships. Extreme distances.
ii. Sea reconnaissance carried out by aircraft based on shore, chiefly observation of hostile submarines and protective reconnaissance for home bases.
iii. Fleet reconnaissance carried out by aircraft based on aircraft carriers or by flying boats. Strategical reconnaissance, and tactical reconnaissance during battle.

Airships.—Though Lord Beatty declared that one airship was capable of doing the work of six cruisers,[1] it is doubtful if it has a future in reconnoitring work by reason of its vulnerability to attack by heavier-than-air-craft. A fleet at sea which is approached by one of these airships can despatch one or two fast-climbing single-seaters from an aircraft-carrier, and the experience of the late war teaches that, once attacked by single-seaters, the airship has little chance of regaining its base. The production of helium gas in large quantities may alter the war status of the airship, but even then it is still much affected by weather conditions. Its advantages for reconnaissance purposes at sea are obvious, but it is doubtful if these advantages will ever outweigh its inherent disadvantages. During the earlier part of the late war, there is no doubt that the German Zeppelin service performed the most valuable reconnaissance work in co-operation with the German navy, and the immunity with which the High Seas Fleet could occasionally venture forth was due entirely to excellent air reconnaissance which ensured the absence of the Grand Fleet from the waters about to be patrolled by the German Fleet. At Jutland the Germans are thought to have had some Zeppelins, but their value was lessened by adverse weather conditions. On the following day, however, they kept the Grand Fleet under observation throughout the whole day. From the beginning of 1917 onwards, German reconnoitring airship activity was paralysed by our fighting aircraft, and for this reason it is difficult to foresee any immediate future for the airship in reconnaissance.

[1] "The First World War," Vol. II. Colonel Repington.

Sea or Ocean Reconnaissance.—The degree of activity in this form of reconnaissance will in some measure be dependent on the distance of enemy waters from the air bases of the ocean reconnaissance units. If the enemy naval base is within radius of action, these shore based aircraft can acquire valuable information as to his activity. In narrow seas such as the Baltic and Adriatic all reconnaissance, including a certain amount of fleet work, could be undertaken by shore-based aircraft. Submarine and merchant shipping reconnaissance, in fact all forms of ocean reconnaissance, comes within the scope of aircraft based on shore.

Fleet Reconnaissance.—This will normally be carried out by aircraft operating from mobile bases (aircraft carriers) which accompany the fleet to sea. Within this category must also be included the large flying boat which may, in the future, accompany the fleet by re-fuelling at sea.

The work of fleet aircraft may be classed broadly under two headings :—

(i) Before battle.
(ii) During battle.

" Before battle " will include normal Fleet reconnaissance, which should report the presence or otherwise of the enemy, the presence of mines or submersible craft and their location. If the enemy fleet is seen to be at sea, the information will be passed back at once to the Admiral, who will despatch immediately a strong force of fighting aircraft to secure superiority at the decisive time and point, thus enabling the reconnaissance aircraft to acquire early detailed information unimpeded by enemy opposition. Thus as he comes into battle the Admiral will have accurate information as to the position and strength of the enemy, while at the same time his fighting aircraft will endeavour to deny similar facilities to his opponent. It should be mentioned that as he moved forward at Jutland, Viscount Jellicoe had only a vague idea as to the enemy's position; his cruiser reports, as he himself says, being few and inaccurate.[1] It should also be mentioned that one of the few British aircraft available sent in an accurate report by wireless concerning a part of the German Fleet, this in exceptionally unfavourable weather and at a time when the reconnoitring abilities of aircraft were lightly valued by naval authorities.

" During battle " the commander must be kept informed on the following :—

(*a*) All changes of course and of formation in the enemy's main battle fleet.
(*b*) The approach of any supporting force.
(*c*) Enemy submarines.
(*d*) Position and movement of enemy destroyer flotillas, paying particular attention to the likelihood of a combined torpedo attack.

[1] " The Grand Fleet." Viscount Jellicoe.

(*e*) Position and movement of enemy battle and light cruisers if not in action with the main fleet.

In addition, during battle there is the work of the fleet-spotting aircraft. These should, if possible, operate from separate carriers, so that they will not interfere with the arrival and departure of the reconnaissance aircraft.

In regard to (*a*) above it should be noted that at Jutland, Viscount Jellicoe was unaware that the German Fleet had turned away until about twenty minutes after it had done so.[1] To this fact (in other words to poor reconnaissance on our part) the Germans owe no small measure of their escape. The Battle of Jutland proved the inadequacy of the methods of reconnaissance used.

Cruisers or other craft detailed to intercept enemy commerce-raiders should carry a seaplane, which in a single reconnaissance could cover a wide area in a short time, establishing the presence or otherwise of the enemy vessel in that area. Such a policy would undoubtedly shorten the career of these destructive vessels. Had Admiral Milne had a seaplane at his disposal he would have been able to locate the "Goeben" and "Breslau" hiding among the Ægean Islands from the 8th to the 10th August, 1914, awaiting Turkish permission to enter the Dardanelles. As it was, his only cruiser, the "Weymouth," could not search all the ground in so short a time; the enemy escaped, with what disastrous results are well known.

XII. Influence of Aerial Reconnaissance.

In considering this subject it must be borne in mind that circumstances have shown other methods to be inadequate, consequently the air may be said to be the only means of acquiring information (apart from espionage) in naval warfare; this, therefore, is its outstanding quality. Other effects may be summarised as follows:—

(i) Supplies early information which will eliminate the uncertainty previously associated with the modern naval engagement.
(ii) Reduces the possibility of surprise.
(iii) Enables the enemy to be watched consistently at his base.
(iv) Permits observation in close proximity to strong enemy forces without naval tactical support.
(v) Furnishes a means of reconnaissance against which naval craft cannot exercise deterrent effect.
(vi) Increases the area which a stronger belligerent can search in his endeavour to find the enemy. (In 1898 Cervera's Fleet was in Santiago Harbour for a month before the Americans located him.)

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[1] "The Grand Fleet." Viscount Jellicoe.

(vii) May hasten a more general adoption of the submersible craft. This is, however, somewhat remote and need not for the present be considered.

Conclusion.

In both land and sea warfare the aeroplane has shown itself to be not only a superior method of acquiring information about the enemy, but in many circumstances the only method. It is not only capable of saying where the enemy is, but it can report his movements and his position in depth; that is, it can do more than "feel the fringe" as the French say; it can report on enemy activity and on his reserves far behind the immediate battle front.

On the other hand it must not be supposed that aerial reconnaissance will revolutionise warfare, or render the conduct of war more easy for the commander in the twentieth century than for his predecessor of the Napoleonic era. The speed and accuracy with which the aeroplane can supply information is merely a factor which allows the individual to march with the progress of science in war. By the introduction of new and more difficult weapons, science has rendered the art of war more complicated, but science does not forget to neutralise its own efforts by placing in the hands of a commander facilities, such as the aeroplane, which will at least permit him to keep pace with its progress. Thus there is nothing about the aeroplane and its employment on reconnaissance which will lead to any modification in the principles of war. It is in the application of principles of war to the methods of warfare that new influences have their effect, and within these limitations this is likely to be profound. The effect of the introduction of aircraft is, therefore, similar to any other innovation of war. That is, the leading principles of war are unalterable, but the application of these principles is affected by the introduction of new weapons and new inventions.

THE BATTLE OF SOKOL-DOBROPOLGIE: 15th AND 16th SEPTEMBER, 1918.

By MAJOR T. E. COMPTON.

APART from its results in bringing about the complete surrender of the Bulgarian Government in less than a fortnight after the opening of the battle, this Allied victory deserves to be known in some detail for its tactical and strategical lessons, of which two in particular are of the first importance—(1) The Battle of Sokol-Dobropolgie is an example of victory gained by breaking a fortified front in a sector deemed by its defenders to be impregnable; and (2) the strategic pursuit that followed was perhaps the most effective since Jena.

The battle was part of a greater one, just as the Battle of Flanders in the following October was part of the great combined offensive of the Allies in France. It was the prelude of the general assault of French, Italians, British and Greeks, which began on 18th September and lasted to the 24th,[1] during which time the Serbs with Allied cavalry pushed their advantage towards the Vardar at Krivolak and Demir Kapu on the one side, and towards the Monastir–Veles road, at Prilep, on the other, with the object of effecting beyond repair the strategic fracture of the enemy's front.

The part taken by British troops in the offensive of the 18th–24th September could not in the nature of things—their strength having been reduced to less than four divisions—be of the same predominance as in Lord Allenby's victory of 19th September in Palestine, which, occurring as it did at the same time, overshadowed whatever interest there was, from a national point of view, in the doings of the British contingent in Macedonia; and the decisive attack of the 15th–16th had been delivered by Serbs and French. But British tenacity in attacking with the utmost determination, on the 18th, and again on the 19th, a fortified position west of Lake Doiran which had hitherto resisted all attempts to take it, facilitated in no small measure General Franchet d'Esperey's operations west of the Vardar. The combat of Lake Doiran was in fact a holding attack which retained the Ist Bulgarian Army for six days longer—eight days altogether—on a front which had previously been broken, and rendered possible the total dislocation of the enemy's dispositions in this quarter, leading up to the astounding success of the strategic pursuit already referred to.

As a French General held the supreme command of the Allied Forces in the Balkans, the French is presumably the official name for the

[1] Called by the French *The Battle of Monastir–Doiran.*

victory of the 15th–16th September, 1918—Sokol-Dobropolgie. But the Serbs call it the Battle of the Moglenitza, because the river of this name, a tributary of the Vardar, has its sources in the mountainous region of which the Sokol, the Dobropolgie, Vetrenik, Dzena, &c., are the principal heights, averaging about 6,000 ft. above the level of the sea.

Since the capture of Monastir by the Allies in 1917, the Germano–Bulgarian front ran from the Okhrida Lake to the Gulf of Orfano; that is to say, from Albania to the Egean Sea, through Mala Rapa, Guevgueli, Lake Doiran (north of) to the mouth of the Struma. About the Sokol–Dobropolgie, the line coincided more or less with the Serbo-Greek frontier; about Lake Doiran it was just south of the Bulgarian frontier.

Although, owing to events in France, the German units had nearly all been withdrawn, a German, General von Scholtz, still commanded in chief the Bulgarian armies, with headquarters at Uskub. Mackensen was at Bucarest.

From December, 1917, to June, 1918, General Guillaumat was in command of the Allied forces, when, having been appointed Military Governor of Paris (including the entrenched camp) he was relieved of his command in the Balkans by General Franchet d'Esperey.

During his six months of command, General Guillaumat had succeeded in reconciling differences between the staffs of the various contingents, thus raising the moral value of the Salonica Army at the very time when, on account of the scarcity of food, the enemy's morale was becoming affected by a spirit of discontent.

In the spring of 1918, there had been food riots at Sofia, Philipponopoli, Tirnova and other places, while at Nish (Serbia) in June an extraordinary affair of indiscipline occurred, prompted, no doubt, by want of bread stuffs. A flour train of closed wagons marked "heavy artillery," from Sofia for Germany, was stopped at Nish by Bulgarian soldiers, who killed the engine-driver and the station-master (both Germans) and pillaged the train.

Before giving over his command, General Guillaumat had advanced the front south-west of Guevgueli in the direction of a hill called Skra di Legen (taken and abandoned in May, 1917) by an action in which the Greek Volunteer Divisions took part with the French 16th (Colonial) Division. This advance no doubt had the effect of causing the enemy to reinforce this sector, and may have assisted General Franchet d'Esperey in his plan to surprise the enemy by an attack in a quarter where he least expected it.

The Opposing Forces.

General Franchet d'Esperey had under his command at the end of June the following contingents, taking them from left to right:—

i. The principal part of the French Contingent (eight divisions in all) plus the 35th Italian Division and the 3rd Greek Division, under General Henrys. This force was known as *L'Armée*

Française d'Orient, and had its left flank covered by the Italian Corps of Occupation in Albania, an independent body under General Ferrero, which had Austrians opposed to it.

ii. Next came the six Serbian Divisions — 122,000 strong when brought up from Corfu—organised into the Ist and IInd Serbian Armies, of three divisions each, and taking post along the front (left to right) in the order named. Prince Alexander was their Commander-in-Chief, with the Voïvode Michitch as Chief of Staff.

iii. A *Groupement* of French divisions, plus the IVth Greek Division, under General Anselme, carried on the line to the Vardar, wes of Lake Doiran.

iv. The British Contingent of four divisions with six Greek divisions attached, forming what was known as the *Armée Britannique,* was responsible for the front from the Vardar to the mouth of the Struma.

The British, with two Greek Volunteer Divisions[1] (Seres and Crete) held the left of this part of the front about Lake Doiran and east of it, the remainder watched the line of the Struma to the Gulf of Orfano.

At this time there were 28 divisions on the front, made up of eight French, four British, one Italian, six Serb, and nine Greek. But before September, 50,000 men, including non-combatants, half French and half British, had been withdrawn for service in France, leaving about 300,000 fighting men, it has been estimated, under General Franchet d'Esperey in this secondary but nevertheless important theatre of operations.

This number, with good leading, was just sufficient in the circumstances to carry out and complete a glorious offensive, which, with that of Lord Allenby in Palestine, had a marked effect on the general situation in the theatre of war. It was just one of those exceptional cases mentioned by Clausewitz of an offensive in a secondary theatre which was justified by peculiarly favourable circumstances, and as regards numbers, also following his reasoning, the operation was given the exact importance it deserved. It is evident that the six newly formed Greek divisions could be better employed on the spot than in being sent to reinforce the main theatre, even if transport could have been made available for them.

French aviation was strong.

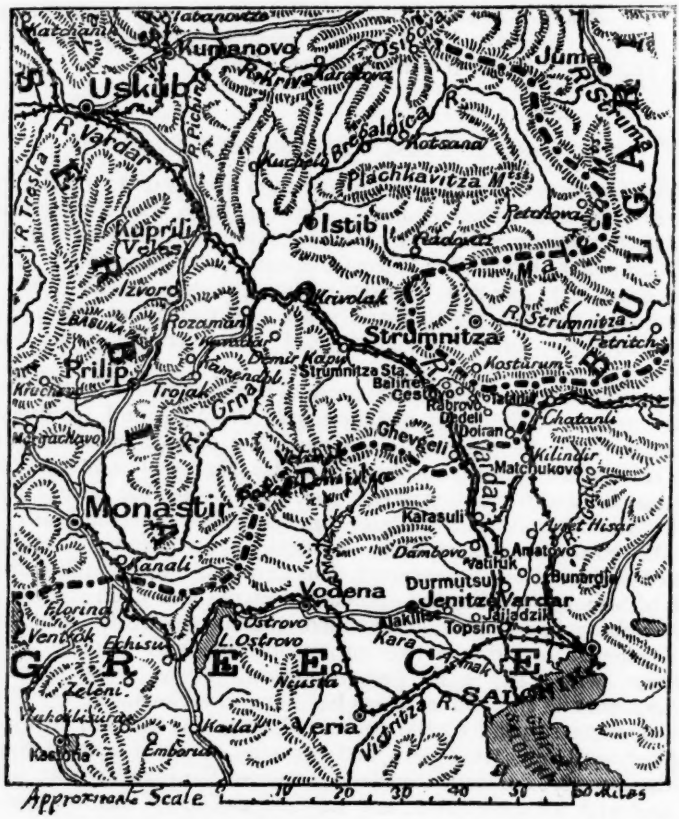
The Enemy.

In Albania, the Austrian 19th Corps d'Armée faced the Italian Corps of Occupation under Ferrero.

[1] When M. Venizelos broke with King Constantine and proceeded to Salonica, he raised three divisions of volunteers for service with the Allies: the Seres, Crete and Archipelago. A reconstituted Greek Regular Army of six divisions joined General Franchet d'Esperey in June, 1918.

From Lake Okhrida to the sea coast of Thrace, the Bulgarians held the front divided into four armies, posted in the following order from the right :—

i. The (so-called) German XIth Army of 120 battalions, commanded by General von Steuben, comprising the 1st, 2nd, 3rd, 4th, and 6th Bulgarian Divisions and one Mixed Division, in which were two battalions of Germans (possibly reinforced in September by five more[1] from Rumania).



This army held the front from Lake Okhrida to the Mala Rapa, and had opposed to it the French and Serbian armies and the left of Anselme's *Groupement.*

[1] The greater part of this reinforcement would appear to have been sent to the Struma front.

ii. The Ist Bulgarian Army of 65 battalions carried on the line to the Lake Doiran sector inclusive, having opposed to it the right of the Anselme *Groupement* and the British (forming the left of the Anglo-Greek Army).

iii. The IInd Bulgarian Army of 50 battalions occupied the rest of the front to the mouth of the Struma, opposed to the remainder of the Anglo-Greek Army.

iv. In Thrace, the weak IVth Bulgarian Army of 20 battalions watched the coast against a possible landing of French and British.

Heavy Artillery, Aviation, Telegraphs and Engineers were mostly German; and some machine-gun detachments had apparently been left with the XIth Army.

General Franchet d'Esperey's Plan.

There were two great lines of penetration northwards: by the Prilep Plain and by the Vardar Valley. Between them was a mountainous rampart marked by numerous peaks or summits, known as the Sokol, the Dobropolgie, Krevenitz, Vetrenik, Koziak (averaging about 5,200 ft. above sea level), Topolitz, Borislau (6,200 ft.), and Dzena (6,800 ft.), running in a general direction north-east, and coinciding very approximately with the Greek–Serb frontier, Dzena overlooking the Vardar Valley.

By attacking in force the left centre of this barrier—Sokol to Vetrenik—more or less at the point of junction of the XIth and Ist Bulgarian Armies, it might be possible to intercept the communications between these two armies. Given successful surprise, this result would be highly probable, the geographical strategic points to be aimed at being Krivolak on the Vardar railway and Prilep on the Veles–Monastir road. This was the strategical conception. Tactically, the enemy, it might be counted on, would have his reserves some two days away from the decisive point of attack, covering the approaches of the two main routes. The Sokol–Dobropolgie heights, once taken, the success might be exploited and developed for a day or two without meeting with serious resistance. Moreover, with care in its preparation, there was every probability that an attack in this sector, which had never been menaced, would come as a complete surprise to the enemy. Lastly, the Serbian Army, well equipped with mule transport, and accustomed to mountain warfare, was there ready, burning with desire to expel the invader from Serbian soil, and with its spirit raised and fortified, as indeed was the case with all the Allied troops, by the splendid news from France.

For the above reasons, after personally reconnoitring the ground and selecting the artillery positions, General Franchet d'Esperey applied in July to the Supreme Council for permission to prepare a general offensive on the plan submitted for the principal attack, the enemy on the rest of the front to be held in position by holding attacks pushed on decisively

as opportunity offered. After some delay and interchange of views, the plan being discussed in London and Paris, it was approved by the Supreme Council, military opinion agreeing in its probable success.

The Execution of the Plan.

The preliminary preparations were on an extensive scale. General Franchet d'Esperey decided to reinforce the Serbian IInd Army, which was to assault the Sokol–Vetrenik position, by attaching to it two French divisions, the 122nd and 17th (Colonial). In addition, 13 heavy batteries, 30 trench pieces, and whatever technical services the Voïvode Michitch required were placed at his disposal.

Eight divisions (six Serb and two French) on a front of less than 20 miles, which had previously been held by four, demanded reorganisation of supply and transport. Only the extreme left of the Ist Serbian Army could be served by the Salonica–Florina Railway. The remainder, and the five divisions of the IInd Army, were dependent upon a light railway from Vertekop (a branch from the above-mentioned railway), which was very defective and quite inadequate. Motor roads, therefore, had to be constructed.[1] Heavy guns had to be got up to 2,500 ft. altitude on to the Floka position.

General Guillaumat had conducted the negotiations with Great Britain and Italy to an agreement by the 4th September; but it was not till the 11th that actual authority to attack reached the Commander-in-Chief in Macedonia.

Mackensen's reinforcements (five battalions) appear to have gone chiefly to the Struma front, which shows how well the Allied preparations opposite the Sokol–Vetrenik sector had been concealed.

The attack was ordered for daybreak on the 15th September. At 8 a.m. on the 14th the artillery preparation began. The wind was very high and unfavourable for aviation, but the Allied squadrons at work succeeded in photographing the effects of the bombardment by 11 batteries of 4·80-inch guns, 9 batteries of 6-inch guns, and 13 batteries of 6-inch howitzers, 4 batteries of 4·2-inch guns, 35 mountain batteries of 65 mm., 48 field batteries of 75 mm., and 84 trench pieces—total, 574 guns.

The principle of artillery preparation, which had been abandoned in France, *in order to favour the employment of tanks, which can only manœuvre with great difficulty over ground cut up by prolonged artillery fire*, was on this front everywhere the rule, except north-east of Lake Doiran, where we shall see the attack by a Greek division, intended as a surprise, was not very successful.

The IInd Serbian Army attacked at 5.30 a.m. on the 15th, on a front of 10½ miles, with five divisions. The Ist Army on its left had a front of 10 miles, with three divisions.

[1] In all the French made 560 miles and the British 250 miles of new roads during this campaign

The main attack (IInd Army) was delivered as follows:—The French 122nd and 17th Divisions and one Serbian division were in first line in the order named from left to right.

The two remaining Serbian divisions were in second line immediately behind the French divisions. The 148th Regiment of the 122nd Division carried ladders for escalading the Sokol, which, with the Dobropolgie, were the objectives of this division.

Kravitza was the objective of the 17th Division, and the Vetrenik was that of the Serbian Choumadia Division.

The Serb 6th Regiment, on the extreme right of the Ist Army, aided by a flank attack the capture of the Sokol by the French.

The sector attacked having been a calm sector for many months, and the artillery preparation having been relatively short, the infantry advance was favoured by all the advantages of surprise. The Bulgars had gone under cover, expecting a bombardment of several days, and for the first five minutes there was no hostile artillery fire. The attack reached the enemy's trenches before the defenders had come out of their dug-outs.

The French 45th and 84th Regiments took the Dobropolgie very quickly, but the heights behind, of much the same altitude, stubbornly defended, were not taken till after 2 p.m.

In the attack of the Sokol, the French 148th Regiment suffered heavy losses, but by 9 a.m. the whole fortified position from the Sokol to the Vetrenik was in the hands of the Franco-Serbs.

Prince Alexander of Serbia, writing to General Topart on the 18th, declared that his success filled him with admiration for the heroic 122nd Division, which in one day had taken positions fortified for three years and reputed impregnable.

The Serbian Ist Army (on the left of the IInd) attacked on the night of the 15th–16th, and the second line (Serbs) of the IInd Army passed to the front, and at daybreak on the 16th attacked the enemy on the Kravitza plateau, marching on Koziak.

By the occupation of this plateau, the communications of the so-called XIth German Army were threatened. There was severe fighting, the Bulgarians regaining an important position. It required a Serb counter-attack before the plateau was definitely won. There was also an engagement at Gradechnitza between Ist Army troops and XIth Army rearguards.

General Franchet d'Esperey's orders to the Serbs, Cavalry, and 17th Division, were to march without stop, to the extreme limit of strength of men and horses, in the directions of Prilep and Krivolak. The bridge over the Lower Cerna having been burnt on the 18th by the retreating enemy, another was thrown, use being made of bullock wagons captured.

The Strategic Pursuit.

With the crossing of the Lower Cerna by the Serbian IInd Army, the battle and tactical pursuit following immediately on victory, may

be said to have ended, and the strategic pursuit begun. For General Franchet d'Esperey had no idea of resting satisfied with victory alone. Like Napoleon after Jena–Auerstadt, or rather, perhaps, it would be more correct to say, following the example of the great Emperor, the total destruction of the enemy's organised forces was now his goal.

Krivolak and Demir Kapu were reached on the 21st, and immense captures made of supplies, forage, automobiles, wagons, locomotives, hospital parks and batteries, General Anselme's divisions on the right of Serb IInd Army having rendered material aid by the victorious combat of the Dzena (6,857 ft.), 19th–20th September, in the course of which action two Greek divisions and one French division, after driving the enemy from the Dzena heights on the right bank of the Vardar, cleared the Gradec heights on the left bank as well.

On the Veles–Monastir road, Prilep was occupied by the cavalry under General Jouinot-Gambetta on the 23rd, evening, French infantry of General Henrys' army (on the left of the Serbs) entering the town on the 24th. Prilep had been the Headquarters of the XIth Army, whose communications with the Ist Bulgarian Army were now completely cut. The first objective of the strategic pursuit had therefore been realised. The next and more important step was to intercept the XIth Army communications with Sofia, and to keep the enemy's principal army isolated in Western Serbia and deprived of supplies.

With this object, General Jouinot-Gambetta received the mission of pushing up the Vardar valley for the purpose of seizing promptly Veles and the important town and railway junction of Uskub, 30 miles farther to the north, and hardly that distance from the Albanian frontier. Besides the cavalry, two infantry brigades, several batteries, and one battalion of *chasseurs-à-pied* were placed under his command, and he was further supported by the 76th Division. His orders were to prevent the XIth Army reaching Sofia.

Veles was occupied on the 27th and Uskub on the 29th. Von Steuben's XIth Army in which, besides a mixed division and certain German technical services, there were, as already stated, six Bulgarian divisions, with retreat cut, and closely pursued by the Ist Bulgarian Army, the Italian division and the French and Greeks under General Henrys, was now in a perilous situation, helpless in all probability from want of supplies, and suffering in discipline from the hostility of the Bulgarians towards their German masters. It is not altogether surprising therefore that on 28th September, plenipotentiaries from Sofia reached Salonica, having presented themselves previously under a flag of truce in the British lines, and an armistice was signed on the 29th at 10.50 p.m., by which, besides other onerous conditions, the XIth Army of 100,000 men surrendered as prisoners of war.

Truly, taking into consideration the situation on the Balkan front as it presented itself on the 15th September, the strategic pursuit after the Battle of Sokol–Dobropolgie–Vetrenik deserves to rank, in a second

plane of course, in respect to its rapid and complete success, with the strategic pursuit after Jena.

It remains to describe briefly the British share in this glorious fortnight, as given by M. Constantine Photiades in the *Revue de Paris*, from whose articles, and from that of M. Ancel in the *Revue des Deux Mondes* of the 15th February, 1920, the details given in this paper were obtained.

The Doiran Lake is a physical feature situated on the Serbo-Greek frontier and close to that of Bulgaria, which should have a conspicuous place in the annals of the British Army. For ever since the early winter of 1915–16, when our Irish regiments covered the retreat of the French from Krivolak and the Lower Cerna after their gallant but abortive attempt to bring aid to the Serbs, British contingents have camped upon its borders, and heavy fighting has frequently taken place in its vicinity. The Vardar road and railway being the most direct route both to Belgrade and Sofia, it happened as a natural consequence that it should be barred by a defence of the most formidable description, which, continually strengthened, became, as time went on, an almost impregnable obstacle to a British advance northwards. It was really only by surprise that an assault was likely to succeed in this quarter, and from the nature of General Franchet d'Esperey's plan this was just what was impossible of realisation. From the 16th of September, when the capture by the French and Serbs of the Sokol–Vetrenik position was known, the enemy was everywhere on the alert, and the British attack had to be delayed till the 18th, it being essential to hold the Ist Bulgarian Army to its positions while the Serbs pushed in between it and the right of von Steuben's XIth Army.

The British part in the battle was marked out by its strategical conception; the longer the Bulgarians could be retained in their positions in the Vardar valley, the more certain would be their eventual discomfiture. Nevertheless, the attack, when delivered, had to be of a serious nature, pushed home with the greatest determination in order to occupy the enemy's reserves and prevent them from being sent to fill the threatened gap.

West of Lake Doiran, the 22nd Division (General Duncan) and the Greek Seres Division attacked frontally after an artillery preparation. North-east of the lake the Crete Division and a brigade of the British 28th Division, attacked in flank without preliminary bombardment, hoping to surprise the enemy, cavalry being at hand in readiness to pursue. On the right bank of the Vardar the British 27th Division (General Forestie -Walker) marched on Guevgueli. Unfortunately, the attack of the 18th failed everywhere on the left bank. There were too many nests of machine guns left which the artillery preparation had failed to reduce, and north-east of the lake there was no surprise. Only the Seres Division succeeded in entrenching itself on captured heights.

During the night of the 18th–19th, the 22nd Division was reinforced by two brigades and a regiment of French Zouaves, but the attack of

the 19th again failed to overcome the enemy's resistance against concealed machine-gun and minenwerfer fire. Nevertheless, the real object of the assaults was gained in keeping the enemy fixed to his positions at the most critical period of the operations.

On the 22nd the British 27th Division entered Guevgueli, and on the left bank the enemy at last began his retreat. Having stayed too long, when he did go it was necessarily with headlong rapidity. The unpleasant truth could no longer be questioned. The front was broken.

On 25th September the British in pursuit passed through the defiles of the Kosturino and entered Bulgaria.

On the 26th the cavalry were at Strumica with its vanguard at Rodovista, where the 3rd Greek Cavalry of Anselme's command joined it. But resistance was at an end, and one of the chief reasons, if not the principal reason, why an armistice on the Entente terms was signed so quickly, was the fear of reprisals by Serb and Greek troops on the Bulgarian population if the invasion was allowed to proceed. The Bulgarian troops, encouraged by their leaders, had committed all sorts of atrocities, when the military conditions were in their favour, on both Serbs and Greeks, and now that it was the turn of their enemies, they expected the worst for they knew they deserved it. In consideration of the Bulgarian delegates' prompt acceptance of all the conditions, the Allies agreed that, on account of the very natural feeling of resentment prevailing among the Serbian and Greek troops against the Bulgarians, the occupation of strategic points, pending the withdrawal of German and Austrian units from Bulgaria, should be carried out by the French and British only.

AUSTRALIAN PATROL OPERATIONS, STRAZEELE, JULY, 1918.

By Lieut.-Colonel A. M. Ross, C.M.G., D.S.O., *p.s.c.*

IT is hoped that the patrol operations of which a detailed description is given may be of interest in themselves. But the chief object is to provide instruction for the regimental soldier. The example given is authentic. It is taken from the latest war, and bears out the principles of the pre-war Infantry Training. Patrol-work is freely taught, but one meets with few instances of an operation actually carried out and then got up as a matter of instruction. The portrayal of an action, accompanied by a diagram on the blackboard, filled in as the lecture proceeds, or by a map showing essentials only, carries great weight.

The example quoted is the handiwork of men of the First Australian Division. Without in the least decrying the British soldier, it is fairly generally admitted that the Australian had peculiar gifts for this work. His very mode of life, independence of character, initiative, and upbringing fitted him for this special duty. Add to this, great bravery and a thorough belief in keeping a clear No Man's Land, and there is little more to be said. The Digger disliked raids; he considered them too costly for the results; but he liked " to have no Jerries near the posts at night," and was always to hand for any reasonable patrol. The great variety of ways in which he carried out his task space forbids to describe here; but he constantly changed his methods, formations and ruses. The example given seems to be almost a model under the circumstances. The *morale* of the Germans was not low at the time.

In lecturing on the subject, instructors are recommended to pick out just a few of the many little lessons, and drive them home. No attempt has been made to embellish a plain statement of facts.

Subject of the Instruction.

Instances Nos. 1 and 2 are instances of patrols sent out with a view to obtaining information and not to fight.

Instance No. 3 is that of a genuine fighting patrol.

One map covers all three operations.

For instructional purposes it would be better to deal with and criticise each operation before proceeding to the next. The points of reference in the narrative from which lessons are drawn are numbered and inset (L, etc.), and correspond to the number of the lesson.

General Description.

On 11th July, 1918, the First Australian Infantry Battalion was holding the front line between Strazeele and Merris, astride of the railway which runs to the south of both of these villages.

The country consisted of fields of deep crops, with scattered farmhouses or garden enclosures bounded by hedges.

The battalion front was held by two companies, each having three platoons forward and one in support. Each of the three front-line platoons in each company formed a picquet. The battalion thus had six posts in its front line. A third company was in support, and the fourth in reserve.

The company astride of the railway was holding three platoon posts. The central post (No. 2) was actually touching the southern side of the railway. The southern post (No. 1) was about 250 yards south of it. The northern post was 150 yards ahead, and slightly to the north of the railway.

Operation No. 1.

In front of No. 2 post and 300 yards away was a small house. This house was immediately south of the railway. The grass space surrounding the house was enclosed by a hedge and bordered on the railway. No. 2 post and this grass plot each bordered on the south side of the railway, with about 250 yards of tall crops separating them.

The platoon commander of No. 2 post, on taking over, had been told by the officer whom he relieved that he believed this house to be occupied. The post, however, had a bad field of view, as the land rose slightly in front of the post and dipped again to the house.

When daylight began to break, the incoming platoon commander sent out a sergeant and one man along the ditch on the south side of the railway to a point near the top of the rise, where they could get a better view. They returned at 5 a.m., when a corporal and one other man were sent out to take their place for two hours.

During this time the platoon commander and a corporal crept into a shell-hole about 50 yards in front of their post and fired some rifle grenades at the house and the hedges round it.

No movement of any sort was seen during these periods from No. 2 post. The platoon commander reported to the company commander at 8.30 a.m. He learnt from the commander of No. 3 post (across the railway to the north) that when the rifle grenades were fired Germans had been seen to leave the house (L 1).

Identifications were needed. It was, therefore, decided that a patrol from No. 2 post should go out and examine the house.

At 9.30 a.m. the platoon commander from No. 2 post took out the sergeant and corporal who had been patrolling up to that time as described above, and one other man. Each carried two or three bandoliers of ammunition and four bombs. The officer and sergeant also had

revolvers. They crept along the south side of the railway till they reached the hedge enclosing the grass plot round the house. The railway afforded a very good avenue of approach to the house because it ran along an embankment about 9 feet high, which shut off all view from anyone to the north. Along the bottom of the embankment on its south ran a continuous hedge, and long the south side of this hedge a ditch 2 or 3 feet deep. Immediately south of this ditch sprang the crops.

The party crawled along this ditch to the corner of the hedge near the house. The house stood on the east or far side of the grass enclosure, about 40 yards south of the railways.

It was decided that the officer and the corporal should creep farther up the ditch to a point north of the house (marked A on the map), from which they could cover the surroundings of the house (L 2), while the sergeant with the other man turned south along the western edge of the enclosure, then along the southern side of it, and so up to the back of the house, going round three sides of the enclosure, and finally getting into the house from the back. This they did, the sergeant and his companion crawling along the outer side of the hedge surrounding the enclosure.

The house had been occupied recently—playing-cards were found—but there was no clue by which the occupants could be identified. The sergeant crept back to the officer, going across the grass plot this time. From where the officer and corporal had been waiting there could be seen in the crops behind the house several very large shell-holes. The sergeant was instructed to clear these shell-holes. He crawled back and across a cleared space behind the house into the edge of the crops and up to the shell-holes, the officer and corporal covering him from the same point behind the railway (L 3). The railway embankment prevented the sergeant being seen from the north. The shell-holes were empty and had never been occupied.

The sergeant returned and the whole party then crawled across the grass plot and southwards along the inner side of the hedge in front of the house until they reached the point marked B, just inside the S.W. corner of the enclosure. Here they lay for some considerable time, the officer searching with glasses the crops to the west of him (*i.e.*, between him and his own post) and the sergeant doing the same to the south. Three suspicious-looking shell-holes were seen in the crops (L 4).

These are marked X, Y, and Z on the map. The earth on the edges of the holes had the appearance of having been newly turned. In the case of Z, suspicion was made nearly certain by the fact that the edge of the crater had been camouflaged by laying on it the crops which had been cut round it.

The party crawled through the crops towards the nearest shell-hole. When 20 yards from it, at point W., the corporal and one man were left with instructions to cover especially the rear of the other two. Then the officer and sergeant worked quietly up to the back of the crater and looked over the rim. A machine-gun was mounted, facing towards our own posts.

The sentry was sitting down in the crater talking to another German who was lying on the bottom of it. The sentry had a revolver in its case on his belt. Both men were completely surprised. They were covered by revolvers, and began at once to cry "Mercy." A threat induced them to be quiet. The officer asked them where the other German posts were, and they pointed readily enough to the crater at Y. If they did not understand the words, they understood the intention.

Being already certain of the crater at Z, this information made the officer sure that the craters at Y and Z were both occupied. They then took the two prisoners back to the corporal and other man at point W. The two Germans carried their machine gun with them. As soon as they knew what was wanted they were very ready to do it.

The officer decided to rush the other two posts together. He left the two prisoners with the two men at W, and then he crawled out toward the southern post (Y), while the sergeant took the northern one (Z). The distance to the southern post was rather longer. It was arranged that the sergeant, when he got into position, should wait until the officer gave the signal; they should then rush the two posts together. It was necessary at frequent intervals to get the head above the crops to see the position. They each reached a point about 10 yards from their respective shell-holes Then the officer waved his helmet and they both rushed in.

The sergeant found four Germans in his shell-hole and the officer eight. In each shell-hole was a machine-gun pointing the other way. In each case as they came up a shot was fired at them. They are uncertain whether the Germans had been aroused by some noise from the taking of the first post. Both the officer and sergeant fired shots from their revolvers. The officer's second shot hit the N.C.O. in charge of the post at Z in the arm, and the Germans held their hands up. They had no idea how many there might be behind the single man they saw in each case (L 5).

A bomb would have settled each party in the craters; but bombs were not thrown because the sound would have informed Germans in the surrounding crops that a fight was in progress, whereas a revolver shot told them nothing.

The whole party of prisoners was hurriedly disarmed and taken back to our post (No. 2) by the shortest route. They were marched overland through the crops at the best possible speed. They were seen by enemy from the houses 250 yards south at point C and were fired on, but none were hit. On reaching the post the prisoners were pushed off at once under escort to company headquarters.

Instructions were then given that all shell-holes in the neighbourhood of the others were to be cleared. The same patrol, with the addition of two other men, went out at once. It worked straight through the crops at all shell-holes near the posts previously captured. From these shell-holes 18 Germans were taken. These were observers or members of the gun-crews who lived in the craters close at hand. The living position generally took the form of an undercut driven into the side of the

shell-hole facing our posts and then sunk some feet down. The opening was covered by a sheet, and was so unobtrusive that in certain cases when looking straight down into the shell-hole it was not easy to discover it. During this operation the sniping from the house to the south continued, and one man was hit. It had been decided to advance our line to the far side of the house near the railway which had first been visited. The corporal and two men, therefore, stayed out there to prevent the enemy from re-occupying it, and three Lewis guns were sent up there in the afternoon (L. 6 and 7). The remaining members of the patrol returned.

Altogether the patrol had been out 3½ hours and had taken 32 prisoners and three light machine-guns (L. 8 and 9).

The lessons to be drawn from this operation are :—

(1) Quick *liaison*. Watchfulness.
(2) and (3). Covering.
(4) Reconnaissance.
(5) Quietness.
(6) Consolidation.
(7) Forward move.
(8) Small size of patrol. Big results.

Operation No. 2.

Meanwhile the left picquet (No. 3), which occupied the post north of the railway, from which a view had been obtained of the Germans leaving the house near the railway, had embarked on a separate operation (L. 1). Less than 200 yards in front of this picquet was an enclosure, surrounded by a hedge and bordered by trees. This enclosure was known to be occupied. At the far southern edge of it was a house. The hedge and drain which made the southern edge of this enclosure continued out into the field in which No. 3 post was sited. About 10.30 a.m. a patrol of one officer, one N.C.O., and two men left No. 3 post and crept under cover of the hedge and drain to the house (L. 2).

One man was left at the corner of the hedge nearest to our post (at the point marked D on the map (L. 3)). The southern edge of the enclosure and the house were found to be unoccupied.

The enclosure to the north of the house was known to be occupied. The patrol decided to search it. A covered-in dug-out was seen by the patrol, who approached it unobserved from the flank. The Germans inside were covered with a revolver and at once surrendered. Two more dug-outs were dealt with in the same way.

The prisoners were then sent back in charge of the N.C.O. The man from the corner of the field (D) was called up. This left the officer with two men. They moved up the field, the officer in the centre, the men on either side of him at 10 to 12 paces interval (L. 4). This enabled three dug-outs to be dealt with at once and the occupants to be captured.

In two dug-outs at the north end of the field, however, some resistance was met with. It became necessary to fire several shots.

Quick action was clearly demanded, for the enemy in the remaining

dug-outs were aroused by the shooting. Bombs were therefore thrown into several of the dug-outs, and two of the patrol were closed in to cut off the enemy's line of retreat (L. 5).

The bombs demoralised the garrison and it surrendered without trouble. Altogether 36 prisoners and four light machine-guns were taken. The patrol finished its work shortly after noon. Later, when the battalion on the left (Fourth Australian Battalion) had cleared in like manner the German posts to the north of this position, our line was advanced, and a post sited in the field which had been the scene of this operation (L. 6).

The lessons taught by this operation are :—

(1) The true soldier is " jealous in honour."
(2) Small numbers used.
(3) Protecting own line of retreat.
(4) Formation—variety.
(5) Prompt action when compelled to fight.
(6) Line advanced at once. Line brought forward on the left. Influence of action of platoon commander No. 1 operation.

Operation No. 3.

Operations Nos. 1 and 2 were both the work of the left company of the First Battalion. It was decided to exploit the success and advance the line (L. 1). This made necessary the capture of the farm buildings at C, from which the first operation had been steadily sniped.

These houses were in an enclosure just south of a road running roughly east and west parallel to the railway, and 200 to 300 yards south of it. Across the road, about 250 yards west of the houses, was No. 3 (left) picquet of the right company First Battalion.

A patrol had already left this picquet about 10 a.m. to explore the buildings with a view to an intended raid (L. 2). An officer and four men made their way up a drain in single file towards the farm. When about 40 yards from the place they formed into single line at five paces interval and crept in this fashion for 20 yards. They were not fired on. A N.C.O. and two men were therefore detached to see if the hedge along the southern corner of the farm enclosure was wired, and also to locate any enemy posts. This party came upon the enemy at the point marked K on the map, and captured seven men with slight resistance. This, however, roused the German post farther south at L, and the party was fired on from there. The prisoners were taken back to our post, two other members of the patrol covering the process (L. 3). Soon after this it was decided to clear the enemy out on our right flank and advance the line.

At 4 p.m. instructions were issued that the farm buildings were to be taken by the right company. The method of attack was to be from the left and rear (L. 4). No. 3 picquet right company was moved northwards from its position across the road to No. 2 post of the left company, by the railway line, and from which the first patrol had issued that

morning. The post thus left vacant was garrisoned by another platoon, while a further platoon was moved up in close support.

The three Lewis guns at the house first captured near the railway line were ordered to give covering fire if needed (L. 5). Several Lewis guns facing the objective from the front were to do the same.

The attacking platoon moved from No. 2 post out towards the house by the railway line and then southwards and south-westwards against its objective, the farm. The platoon was formed in two lines of skirmishers, the first to attack, the second to act as support, guard the flanks and reinforce as necessary. The Lewis guns and rifle grenadiers in the hedge south of the house by the railway covered the advance.

At about 30 yards from the German post at K and from another post 100 yards north of it, the line was fired on by rifles and machine-guns. The posts were at once rushed. Nine Germans and two machine-guns were taken without a casualty. When the left flank of the platoon attempted to advance, however, it came under heavy fire from the right. It was decided to place the post immediately in front (east) of the farm buildings in the position captured (L. 6).

From this position patrols of three or four men one after another worked and took from the flank and rear three German posts just south of them. But there were still other posts farther south causing trouble by machine-gun fire. A patrol of an officer and four other ranks was sent out from another platoon to silence them (L. 7). Two posts were located, one on each side of a road 300 yards south-west of the farm (marked E on the map). These posts were tackled in a manner similar to those previously taken. There was a sharp fight, in which nine Germans were killed and three wounded. Fourteen prisoners and one light machine-gun were taken; two other machine-guns were found but not brought in.

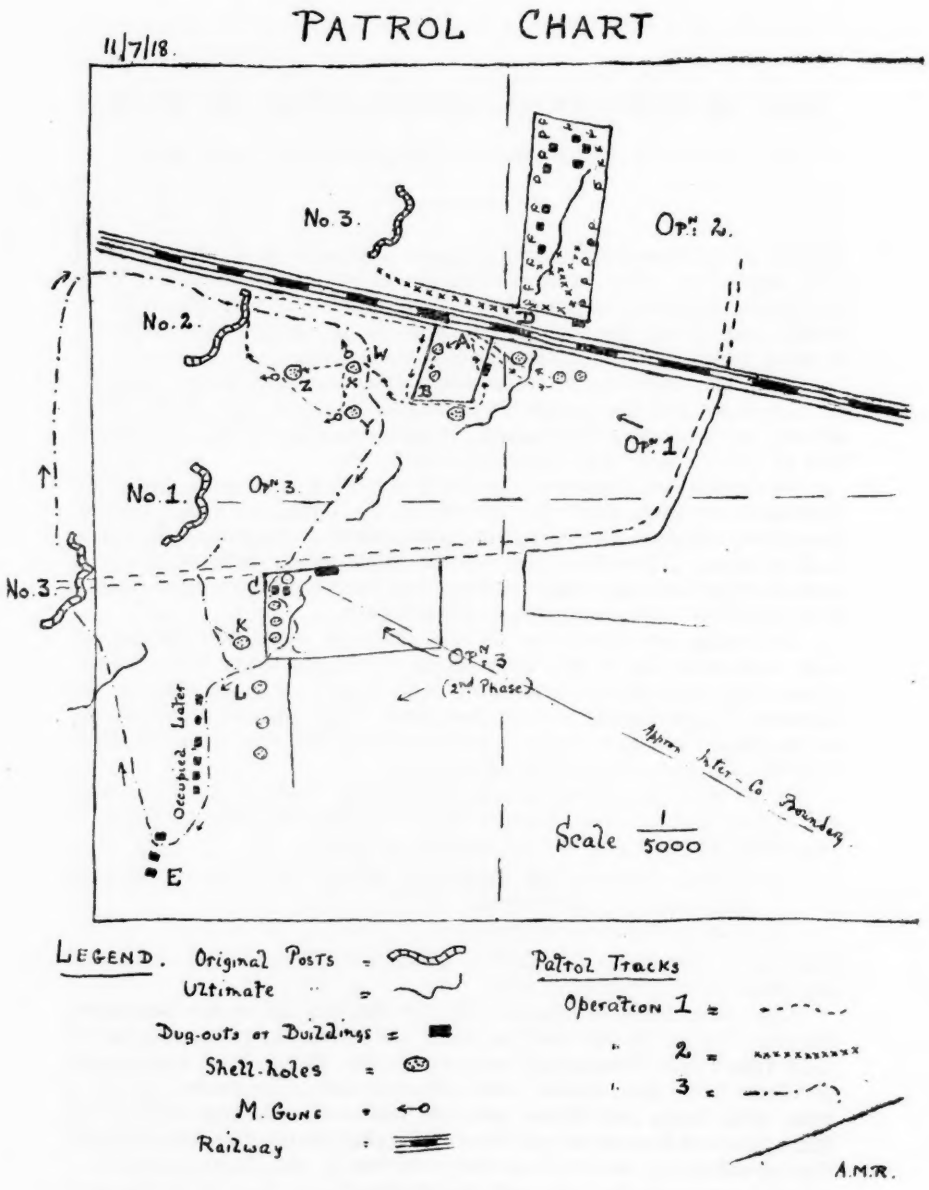
In front of these posts the crops had been cut for a space of from 40 to 80 yards. This operation was over by 6 p.m.

The lessons taught by this operation are :—

(1) The infectious spirit.
(2) Study of formations.
(3) Reconnaissance before a strong patrol.
(4) Method—route—against exposed flank and rear.
(5) Covering fire.
(6) Prompt appreciation. Consolidation.
(7) Prompt reversion to a SMALL patrol.
(8) Value of attack from behind.
(9) No. 1 platoon of company moves up. Half this company is still fresh.

RESULTS OF THE OPERATIONS.

The total captures were 101 prisoners and 12 machine-guns. Nine Germans were killed. Our casualties were three men wounded. Truly a brilliant example of economy of force, and of resource, initiative, and courage worthy of these splendid men from Overseas.


PATROL CHART
11/7/18.
No. 3.
Opn 2.
No. 2.
W
Z
X
Y
A
B
Opn 1.
No. 1.
Opn 3.
No. 3.
C
K
L
Opn 3
(2nd Phase)
Upper Later - Co. Boundary
Occupied Lafter
E
Scale 1/5000
LEGEND.
Original Posts
Ultimate
Dug-outs or Buildings
Shell-holes
M. Guns
Railway
Patrol Tracks
Operation 1
2
3
A.M.R.

THE GEOGRAPHICAL IMPORTANCE OF IRAQ.

By CAPTAIN R. J. WILKINSON, XIIth Pioneers, Indian Army.

WHAT are the causes that tend to make any country, or city, or place more important, richer, or more attractive to trade than another? Why do nations fight for the possession of a particular place? Shorn of all unnecessary detail, the reason is because of its geographical position; in other words, because it commands a trade route.

With the exception of those which arose out of dynastic quarrels, all wars have had their origin in trade rivalries, and since trade routes depend on geographical formation, it therefore follows that all politics and all history have a geographical foundation.

As civilisation progresses, men and countries grow more and more dependent on each other for the means of living. Luxuries become necessities, and each nation exchanges its surplus for something it cannot itself produce. Thus it happens that the most widely differing countries have the most intimate trade relations, and from the beginning of history East and West have exemplified this principle.

Following sometimes the shortest line and sometimes the line of least resistance, the trade routes of the world are many and various: where they converge to a defile or nodal point, as in the case of the Straits of Dover, Straits of Gibraltar, Suez Canal, Straits of Singapore, the Baghdad-Hamadan road, the port or town which commands the defile is of considerable geographical importance.

From time immemorial the trade of Europe with the East has been one of the most lucrative branches of the world's commerce. Originally this trade followed one of two alternative routes:—

(*a*) *Via* the Persian Gulf, Euphrates Valley and Syria, through the flourishing city of Palmyra;
(*b*) *Via* the Red Sea and Suez;

both routes led on to Alexandria, which was the half-way house and emporium for the Eastern trade.

The destruction of Palmyra by the Romans led to the temporary increase of trade by the Red Sea route; but when the outpouring of the Arab tribes under Mahomed's successors upset the civilised government to which both these routes owed their security, the main current of trade with India and China took the line across Central Asia to the Black Sea, and Constantinople became the chief storehouse of the Levant, thus avoiding the countries recently overrun by the Mahomedans.

This route in its turn fell into desuetude at the end of the 15th century with the doubling of the Cape of Good Hope, and it was not until

the opening of the Suez Canal in 1869 that the Eastern trade returned to one of its ancient routes.

Comparison of these routes on a large scale map will show, that that *via* the Persian Gulf and Iraq is obviously the shortest, but, under primitive conditions, the Red Sea route was, and still is, the safest. Given security and modern facilities, however, and allowing for the fact that certain classes of merchandise will always follow the cheaper, though longer and slower, sea route, it seems safe to assume that, at least, passenger traffic and a proportion of the Eastern trade will revert to its original and more direct route *via* the Persian Gulf, Iraq and Syria.

The development of aerial navigation has re-created a demand for the security of the shortest routes, as, in order to ensure landing grounds, petrol dumps, etc., an air route requires a secure land route beneath it for its efficient working.

The geographical importance of Iraq, whenever that country shall have regained its former security and prosperity, will, therefore, be obvious.

Referring to the map and looking at the stretch of Asiatic coast-line lying west of Karachi, we see that the only maritime gateway opening on *land* routes leading to extensive and important regions, is situated at the head of the Persian Gulf. This arm of the Indian Ocean reaches in a north-westerly direction towards the long valley of the Euphrates and Tigris, which extends south-eastwards from the mountains of Anatolia and Armenia to meet it. Along the easy gradient of their valley, traffic flows easily to Constantinople and the Levant.

The Tigris valley route to the Armenia highlands may seem of little importance while we consider Armenia as a destination, but looking once more at our large scale map we see that this ancient country is on the direct route to European Russia, and that the continuation of this route past the Caucasus is already traversed by railways.

Further, the Baghdad-Hamadan road, which ascends north-eastward through the Persian highlands, leads not only to north and north-west Persia, but to a region of Asiatic Russia east of the Caspian already linked by railways, not only to Europe but to Siberia. Thus we see that not only do the ports of Iraq open a way to Moscow and Petrograd as well as to Constantinople, Vienna, Berlin and Paris, but also on to routes to the great regions of inner Asia which do not traverse high mountain barriers as would those from the Indian coast.

The increased draft of ships, the demands of irrigation, and the introduction of railways have combined to diminish the importance of many rivers for the carriage of traffic; but the geographical change of route is slight, for the railway usually follows the river valley, easy gradient being the dominating consideration in the choice of railway routes. This, however, is not so in the case of the proposed railway between Iraq and Palestine, which will probably follow a route straight across the desert, avoiding, after it leaves Ramadi, the Euphrates and

Tigris valley altogether. The resources of modern engineering have rendered easier the coincidence of the shortest route with the line of least resistance; it will therefore be unnecessary to continue this revival of the ancient trade route to Alexandria, as an artificial harbour can be built on the Palestine coast, say, at Haifa.

As a further illustration of our theme, let us consider the pre-war aims of the German Empire.

Looking at a map of Europe and Asia, or, better still, a globe, one can see that the route from Berlin to Baghdad is to all intents and purposes a straight line passing from Germany through Hungary, Serbia, Bulgaria, Turkey, Anatolia and Syria. It must be remembered that the late war did not begin with Belgium but with Serbia, which, at the conclusion of the Balkan Wars, lay across the path of Germany's long contemplated expansion to the eastern Mediterranean and the Persian Gulf.

The following are some extracts from German newspapers published during the war :—

" Germany's Turkish policy, the Berlin-Baghdad idea, was the one pillar of her world-policy and the one great occasion of conflict with Great Britain."

" Should the British permanently retain Mesopotamia, there would be no possibility of German predominance in Asia Minor. Everything must be done to free Egypt from the claws of the British lion and to place the Suez Canal, as in old times, under Ottoman authority, and consequently under that of the Central Powers."

" Had we succeeded in cutting in two the British world-Empire by the occupation of Egypt and the Suez Canal, by completely safeguarding the Persian Gulf-Afghanistan line, the war would have been decided in our favour."

These extracts suffice to illustrate the avowed intentions of Germany in the Middle East. Her plans not only constituted a menace to British rule in India, but were evidently deliberately aimed at the ruin of the British Empire. A certain French publicist stated that " If the Germans were to enter Constantinople and open their great road from the mouth of the Elbe to the mouth of the Euphrates and Tigris, the whole fabric of British Imperialism is concerned. The whole magnificent edifice of the British Empire will be shaken to its foundations."

Imagine the strategic possibilities of a railway through Europe to Baghdad and down to the head of the Persian Gulf controlled by a single Power or confederation! This line would be on the flank of the industrial undertakings of half a dozen other countries, carrying with it a perpetual threat of armed aggression as a means of stifling competition. The possession of such a line would confer on its owner a strangle-hold on Europe and the Middle East, and her power to disturb the world would last as long as she kept it.

Let us consider, further, how Iraq affects the communications of the British Empire.

It is an axiom that whoever holds the head of the Persian Gulf can control the Gulf, and it is inevitable that whoever controls the Gulf will eventually command the trade routes across the Indian Ocean.

Supposing a European Power, hostile to Great Britain, were able to establish a Naval base at the head of the Persian Gulf in rail communication with her arsenals and home bases. That power could maintain a naval force there which would necessitate our keeping a much larger force in the Indian Ocean than hitherto in order to safeguard our sea communications. Further, although our superior squadron could prevent hostile vessels (except perhaps submarines) from issuing through the Straits of Hormuz, yet we might not be able to exercise naval control within the Persian Gulf itself, and there is little doubt that any hostile Power holding the head of the Persian Gulf could in course of time obtain control of the Persian as well as the Arabian shore.

For several centuries now, Great Britain has been recognised (though not always undisputed) as the dominant Power in the Persian Gulf. By her self-imposed task of policing the Gulf and maintaining order among the petty chiefs of the Arabian coast she has earned the right to a consideration of her claims to a voice in the control of the head of the Gulf. The origin of Britain's long standing solicitude for the peace of the Persian Gulf took its rise in the early days of the Honourable East India Company, when it was found necessary to take action in the Gulf in order to protect the Company's vessels trading between England and India.

But the most obvious reason for placing the highest possible value on Iraq is its central geographical position in view of the development of overland traffic and the needs of aerial navigation. Here are the natural junctions for some of the busiest and greatest of the world's future highways. It is highly probable that the largest railway centres and the most important aerodromes will, within a quarter of a century, be found in Iraq, and then its value will be obvious to all.

It is not difficult to imagine the Iraq of the future not only as a geographical bridge between East and West but as the world's centre, the Clapham Junction of the Middle East. Railways and Air routes will radiate from Baghdad, carrying passengers between India, Australasia, Palestine, Egypt, all parts of Africa, Europe, Central Asia, Siberia, Persia, China and Japan.

It may be argued that the prosperity of a country depends on other things besides its mere geographical position, that amongst other things it must produce something for the world's markets. Apart from extensive and as yet unexploited oilfields, than which there is nothing more valuable in this present day, the agricultural resources of Iraq (and Syria)—244,000 square miles—are capable of enormous development. In Iraq particularly the productivity of the past will be restored almost instantaneously when the European engineer, backed by a firm government, once more turns the stream of irrigation over the so-called desert.

Iraq, sometimes erroneously called Mesopotamia, may be described

as a vast depression bounded on the south by the Persian Gulf, on the south-east, east and north-east by the chains of mountains which are the rim of the great Iranian, or Persian, plateau; to the north the highlands of Armenia and Asia Minor; to the west the Syrian desert, and to the south-west the desert of Northern Arabia. From the Northern mountains this depression falls away, at first at a steep and then at a diminishing gradient, till it reaches the line Baghdad-Feluja, where the Euphrates and Tigris flow within 40 miles of each other. At Baghdad, which is only 105 feet above sea-level, and 350 miles in a straight line from the sea, the land changes suddenly into almost a dead flat plain composed of the richest alluvium, which only requires water, labour, and good seed to make it produce enormous crops. Iraq may be said to be divided into three geographical districts: a district of mountains and hills; a district of rolling and undulating plain intersected here and there by outcrops of rocks and by spurs from the mountains; and a district of watery dead plain of an astonishing fertility.

I will conclude with a quotation from a recent book, entitled " The German Road to the East," by Evans Lewin, who says :—

" Mesopotamia itself, the country between the rivers, forms one of the most remarkable regions of the world. Stretching between the two mighty waterways of the Tigris and Euphrates and spreading from the foothills of the Armenian mountains to Baghdad, and thence by extension to the head of the Persian Gulf, it forms a natural avenue between the East and the West, a strategic highway of supreme importance, narrowing to a comparatively small outlet into Persian waters, and an economic road over which were carried the riches of Asia in exchange for the products of Europe. Held successively by the Babylonians, Persians, Greeks, Romans and Turks; the home of antiquity, such as Babylon, Nineveh, Asshur, Hit, Ctesiphon and crowded with the wonderful ruins of buried civilisations, and holding in its alluvial lands the secrets of primitive ages—it presents a standing evidence of the frailty of all things and of the permanence of change and decay. Mighty emperors have held sway over its destinies; warriors have crossed its torrid and sweltering lands on their journeys of conquest. Here were the palaces of Sennacherib and Asshurbanipal, of Nebuchadnezzar and Tiglath-Pileser. Here marched Alexander on his way to the conquest of India; Trajan, Julian, Saladin, and the romantic Haroun al Raschid who made Baghdad the centre of all the wit, learning and art of the Moslem world. It is obvious that a country which has played so important a part in history—from whose bosom have sprung many of the civilising agencies of the past, which has attracted the adventurous from all parts of the known globe—must possess qualities and resources of an uncommon order. In addition to its extraordinary fertility, it was the highway of antiquity and the clearing house of commerce. Germans, with their keen eye to commercial advantages and with their appreciation of strategic values, have recognised, in spite of new strategic and commercial developments, the possibility of re-erecting the ancient empires

of the East and of re-opening a great commercial and therefore strategic route from Hamburg to the Persian Gulf, and incidentally of attacking Great Britain in two of her most vulnerable points—Egypt and India."

There is another great road which was immensely important for many generations. It become known as the " Silk Street " route, from the fact that silks from China were brought by caravans along this road in almost a straight line to the shores of the Mediterranean. The greater part of this road has been surveyed by railway engineers; we may, therefore, assume that in due time there will be a trunk railway running from Pekin through Central Asia to Baghdad and thence to the Mediterranean.

On 3rd April, 1916, a lecture was delivered in Berlin by a member of the Prussian parliament, before the members of the German-Chinese union, in which the lecturer claimed that " The German world-empire could only be established on the basis of overland dominion extending from the North Sea to China by way of Turkey and Persia. A British blockade could be rendered absolutely ineffective if Germany controlled the ancient ' Silk Street ' highway. China and Persia could provide the legions for the war of 1927 with all the food, petrol, copper and cotton required to establish the Teuton as master of Europe and Asia."

Never before have the nations of the world been compelled to recognise, as they do to-day, their dependence upon one another for very existence. Problems of food supply, finance and labour are all international. The great industrial areas of Europe cannot exist without adequate supplies of raw material from Asia and Africa, and multitudes of Easterns have perished from the lack of supplies from the West. It is a matter of prime importance to the world that all the essential lines of communication should be kept open. It is hardly less important that the vast neglected areas of Asia and Africa should be properly developed in order to safeguard humanity from famines, wars and social revolution. It is further impossible for the Western peoples to hope for a higher standard of living without the greater production of which these Eastern lands are capable and the possibility of more rapid communication between East and West.

A STUDY OF THE FRENCH "F. S. R."— INSTRUCTION PROVISOIRE SUR L'EMPLOI TACTIQUE DES GRANDES UNITES.

By CAPTAIN B. H. LIDDELL HART.

CERTAIN divergencies between our F. S. R., vol. II., and the French regulation arise from their respective arrangement and composition. An initial point of difference lies in the size of the two regulations, the French being barely two-thirds the length of our F. S. R., vol. II., despite the fact that there is considerable repetition in the former owing to each scale of formation being treated separately. This compression naturally causes the French regulation to omit much detail which is contained in F. S. R. It may be questioned whether the inclusion of such detail compensates for the resultant loss of clarity. Too many details are apt to obscure the main outlines of the tactical doctrine.

In the second place, F. S. R. deals with the processes generally applicable to any scale of formation, whilst the French regulation distinguishes between the tactics of an army, an army corps, and a division, and treats of each separately. This difference may presumably be ascribed to the fact that the British Regular Army is accustomed to act with small forces, and with an organic unit rarely greater than the division. The British regulation is thus able to achieve a chronological sequence throughout the book, beginning with the declaration of war. Although the British regulation is in good sequence, the French is more scientifically grouped according to the relative importance of the various factors and phases. Examples of this are to be found in the distinction between "the command" and its "means of action"; the placing of "security" before "movements"; the obvious grouping of "information" and "protection" under the one heading "Security"; the grouping of "movements" and "quarters." The inclusion of "night operations" and "methods of instruction" in the French regulations are matters which should surely find a place in F. S. R.

The use of an introductory report to discuss and make clear the recent lessons and experience on which the doctrine is based is a feature which might well be imitated in F. S. R.

From this report we shall quote certain passages which serve to show the basis on which the French regulation is framed :—

"The power of fire has profoundly influenced the form of the operations. In the first place it has given a peculiar power of resistance to improvised fortification, thus enabling considerable frontages to be effectively held by small numbers."

"Behind these solid fronts, the troops available in hand can execute extended lateral movements by railway and motor transport; these

extensive manœuvres are as favourable to offensive purposes as to defensive ends."

" The interplay of reliefs has become an important element in the conduct of operations."

The report dwells on the effect of the new engines of war, tanks and aircraft, on the course of operations. It also insists on the lesson that the increased difficulties of command must not lead to an abrogation of its functions, but rather to increased and improved means of exercising them.

Finally it points out that this book deals with a war of the first magnitude against an enemy of equal degree of organisation, and excludes the consideration of wars against an inferior enemy, relegating their treatment to a further book.

The regulation proper is divided into sections, the first of which deals with the art of command and the influence of personality. It is a subject which might well be considered in F. S. R.

The second section is divided into two chapters, the first treating generally of the arms and services, and the second of the actual higher formations.

In the discussion of the characteristics of the different arms, the only notable point of difference is that in the French regulation tanks are dealt with under the heading " infantry " and are treated solely as an infantry weapon. This assignment to a purely auxiliary *rôle* scarcely seems in accordance with the principle of economic distribution of force, when the speed of the latest types of tanks is taken into consideration. There is reason, however, to suspect that French practice in their training camps is considerably in advance of the theory published in their regulations, which labour of course under the defect of being available abroad. The grouping of the two arms under a single heading may be the preliminary steps to a dénouement favoured by certain highly placed French officers, in which infantry will play the part of Jonah, and tanks that of the whale.

The French regulation does well to emphasize the fact that the organic cellule, or unit, on which infantry organisation is built up, is the group. It is questionable, however, whether the French conception that " the group is characterised by the inclusion of an automatic weapon " is fundamental to infantry organisation. The group is born of human nature, a result of the dispersion enforced by modern fire, and it is a moot point whether that mobility which is the keynote of the infantry group, is not hampered unduly by the inclusion of an automatic weapon. In any case the latter is a useful accessory, but not the root of the group or the mainspring of its action.

In passing, it may be suggested that our organisation of distinct rifle and light automatic sections is more economically sound from the point of view of mobility than to tie down thirteen infantrymen, as in the French group, to the service and protection of one light automatic.

Under the heading of " aeronautique " great emphasis is laid upon

the air service, and the bombing aeroplane is regarded as a long range gun. As regards the services, the French have organised a propaganda service to form part of the military machine. They evidently realise that the true objective in war is the destruction of the enemy's will to resist, his nerves rather than the physical destruction of his forces, which is only a means to the end. If this objective can be attained bloodlessly in any degree, it is obviously more economically sound.

The organisation of the French higher formations is interesting. It is laid down that the division will normally be articulated in three elements: the line of battle, the bulk of the artillery, and the divisional reserve. The command of the first is usually entrusted to the "infanterie divisionnaire" who commands all the infantry of the division. Similarly the whole of the artillery, except portions at the disposal of infantry commanders, is under the control of the "artillerie divisionnaire." The reserves are under the hand of the divisional commander. The division is composed of either three or four regiments of infantry, of three battalions each; a squadron of cavalry; two regiments of horse-drawn artillery; two companies of engineers; an observation squadron of aeroplanes, and an observation balloon; a battalion of pioneers and a divisional school.

The division is defined as "the first unit which is capable of carrying out a proper attack by its own resources, but the range and duration of its action is limited."

On the other hand, the army Corps is defined as "able to engage on an extended front and to continue until a decision is reached."

The distinction rests in the fact that the corps can receive complete units as reinforcements, whereas the division can only receive personnel. The corps comprises originally two divisions and the following corps troops:—One regiment (two battalions) of light tanks; one regiment of cavalry; one regiment of long range heavy artillery, horse-drawn; two companies of engineers; one or two observation flights of aeroplanes, and a balloon; one regiment of pioneers.

The army is the strategical unit, and is exclusively an organ of command and administration.

An air division comprises a bombing brigade and the formations of fighting aeroplanes necessary to cover and protect the brigade. It is under the Army Commander, whose power and force of action is immensely increased by the gift of so large an air formation.

The general reserve of the supreme commander comprises a part of the available corps and divisions, as well as the specialised services.

Section 3.—The Tactical Employment of the Higher Formations.

1. The Commander—his plans and orders.

"The main *rôle* of the commander is to make decisions." "The decision fixes the goal to be reached." The plan falls under three

heads :—The plan of manœuvre, the plan of reconnaissance, the plan for the employment of the auxiliary services. " Before every operation the commander decides his manœuvre." " He crystallises his conception and translates it into a plan of manœuvre." " This plan indicates the general objective of the operation and traces the main outlines of the manœuvre. It fixes the initial direction, the first position to occupy or the first objective to reach, and settles the initial distribution of the force. It is essential that their distribution should be supple and capable of being modified as necessitated by events."

" The decisions of the commander are expressed in his instructions and orders."

However well understood the method of drawing up an operation order, there is a distinct advantage in giving a framework first as is done in our F. S. R., Chapter VI.

II. Security.

The French regulation makes for clear thinking by pointing out that security depends on two factors : information and the disposition of the troops. To have separate chapters for " information " and " protection " as in F. S. R. is illogical and unscientific, and leads not only to redundancy, but to confusion of thought.

The subject of anti-aircraft defence is defined briefly but clearly in the French regulation which divides it into two fractions—a first line which forms a complete barrage, and a second line which is concentrated round the vital points of the rear zone.

III. Movements (and Quarters).

The French regulation surveys the subject of movement in far less detail than F. S. R. On the other hand the former is surely more logical and chronological in dealing with it in the order rail, mechanical transport, and marches, instead of in the order marches, rail, mechanical transport, as in F. S. R.

The French regulation lays down that " rail moves are only justified for distances of at least 100 kilometres for an army corps, or 75 kilometres for a division." " In principle, motor transport continues moves by rail ; it only replaces them in exceptional cases, and on short journeys." " Generally it is not advisable to utilise motor transport for distances less than 20 kilometres in the case of infantry, or 60 kilometres in the case of artillery."

These valuable definitions are lacking in F. S. R. The only ruling to be found in the latter is that in the case of a division it is quicker to move by road if the distance is under 60 miles. The French appear to contemplate a more extensive use of mechanical transport than do we. Presumably the attitude of our military authorities is based on the greater difficulties of terrain on our frontiers and on their knowledge

of governmental parsimony masquerading under the guise of (false) economy.

The French lay down the principle that the army corps marches with divisions side by side; a corps comprising three or four divisions will, however, maintain one or two in the second line. When in the neighbourhood of the enemy on entering the zone of long range artillery fire, the larger formations begin the approach march. They abandon the main roads, particularly those watched by enemy aircraft, and utilise by-roads, tracks, and if necessary march across country.

IV. The Battle.

On the general physiognomy of battle there is little difference between the regulations except that the French is far briefer and does not allow details to obscure the sequence and main outline of the doctrine.

The French regulation appears at fault in disregarding the use of tanks and armoured cars for the pursuit. This vital subject is legislated for better in F. S. R.

Again the French would appear to lay undue emphasis on the importance of the results of the first engagements of a war for the moral of the Army and the Nation. It might be thought that their own experience in 1870 and 1914 would have disillusioned the French as to the wisdom of attaching undue importance to initial successes. Saarbruck in 1870 and Morhange in 1914 were scarcely happy examples. Few will question the soundness of the French prescription that it is best to maintain the same divisions in each corps without change.

V. The Army in Battle.

The French regulation divides the preliminary steps into:—(i) exploration—by aircraft and cavalry, to determine the zone where the enemy is likely to be met; (ii) disposition, which ought to be adaptable to the projected manœuvre. This comprises generally a first line formed by the army corps who have the mission of assuring, when contact is made, sufficient room for the deployment of the army. In second line will be the army corps and special arms destined to constitute the reserve and to manœuvre. "In the course of the manœuvre, in order that security shall be always guaranteed, it is essential that the army shall be united, that is to say all its elements so situated that they can participate in a general action within a period of time which is dependent on the distance of the enemy. The disposition must be articulated in consequence." "From these considerations it follows that when far from the enemy the disposition should be wide and deep. This disposition lends itself best to changes of direction, to an enveloping manœuvre and to the protection of the flanks; moreover it has the further advantage of facilitating the movement of the troops and diminishing their fatigue."

"The nearer one gets to the enemy, the more should the force be closed up, particularly in depth."

(iii) Direction. "The Army commander receives from the high command a general direction oriented on an objective sufficiently distant. He ought to maintain his army constantly in that direction; he deduces from it those he assigns to his army corps. If in carrying out the manœuvre, certain of the army corps deviate or are drawn away from the assigned direction, the army commander must gradually work them back or take the necessary measures to maintain the whole of his army in the general direction. He can, for instance, introduce on his front a corps from the second line."

(iv) Frontages. "The range which an offensive can reach is proportionate to the extent of the frontage. As a general rule it is advantageous to allot the army corps frontages narrower in proportion as the effort required of them is greater; thus they are given the power of pushing their effort more deeply."

These fundamental precepts in regard to disposition, direction and frontages are, strangely, either omitted or not clearly brought out in F. S. R.

The French regulation then deals with the second phase, which comprises making contact with the enemy followed by the engagement of the Army.

"The examination of the information and a study of the ground enables the army commander to determine: either the region where the opposing resistance is established, if the enemy has occupied a position; or the zone where it is best to give battle if the enemy is in movement. Nevertheless before making definite dispositions, certain precise information is necessary; this is obtained by making contact and engagement."

"In the face of an enemy in position, the phase of making contact has as its goal to locate the exact line on which the enemy offers a solidly organised resistance. In the face of an enemy in movement, it consists in determining the marching front of the enemy, and maintaining in front of it a screen of fire under cover of which the mass will be able to take their battle dispositions."

"Contact is progressively effected. In the first place it is the work of the cavalry, who endeavour to determine the apparent contour of the enemy. It is best to seek the first contact as far away as possible, and in every case as far forward as will place the main body of the first line army corps out of reach of surprise by the enemy artillery."

The contact is then definitely effected by the advanced guards of the leading corps, who arrive to support and then relieve the cavalry. "During the making of contact, the commanders of the leading army corps reinforce the fire power of their advanced guards, *which thenceforward form the leading echelon of their battle dispositions;* they take charge of the conduct of the fight within their respective zones."

"According to the whole of the information received, the vigour of their opponents' reactions, and following the orders received from

the army commander, each corps commander controls the entry and mode of action of his troops." " The Army Commander intervenes at the start by defining the points of which it is necessary to have possession for the general deployment of the army, by employing at need the artillery of the army, and by modifying if occasion arises the zones of action of the army corps. The whole of these preliminary actions constitute the engagement—the first act of battle."

The French treatment of these two phases is surely more true to reality. The natural sequence of action can be more easily grasped. In war the phase of making contact blends imperceptibly into the engagement and the latter into the battle. In the French regulation there is no artificial separation of the advanced guard action from the battle. Thus the commander does not fall into the fatal habit of thinking in watertight compartments. The idea of pre-arranged concentration areas is inelastic, and out of touch with reality.

The architect of the French regulation drew up a scientific plan before building was commenced, and a compact house is the result. The contractors who built F. S. R. appear to have done without an architect, and to have built first one wing, then another, and finally added various outhouses. The bricks are good, but the lay-out is haphazard, and the tenants lose themselves in the labyrinth of passages.

The making of contact and the engagement enable the army commander to decide more definitely on his manœuvre to determine the part of the front on which he will endeavour to destroy the enemy, and in consequence to effect the general deployment of the army.

The regulation lays down that " from the point of view of execution, there is no distinction between these diverse attacks "—main and subsidiary. They will all be pushed to the limit, without troubling about alignment; they will be differentiated only by the strength of the force and the extent of the frontage assigned to each of them. It is difficult to understand how such an important precept can have been omitted from F. S. R. Feint attacks have long been the bane of our army; the processes which are essential to " fixing " do not yet seem to be fully understood.

" When the battle is prolonged the army commander can, with the object of manœuvre, organise several important attacks launched successively on different parts of the front." These few lines cover the victorious method of 1918.

" Throughout the battle, the army commander makes his impulsion felt: by the action of the army artillery which reinforces and prolongs the artillery of the corps and division, by the entry into line of the fighting aircraft, finally and above all by the engagement of his reserves. He regulates the articulation of these and brings them progressively closer in such a way as to assure their opportune intervention in the zone where he desires decisive results. In the measure in which he engages them, he seeks to reconstitute a reserve by every means in his power. But he does not hesitate to throw in, if necessary, his

last resources in order to clinch the victory. Thus he conducts the battle."

The influence of the commander on the course of the battle and the means by which he can effect this control are brought out far more clearly here than in F. S. R. In defence, the French regulation lays stress on the importance of flanking positions by which the enemy can be prevented from expanding his penetration and from which counter-attacks can be launched against the flanks of the assailant. In regard to this important precept, which fulfils the principle of surprise, both in direction and concentration, " Infantry Training," 1921, is in advance of F. S. R., which makes no mention of it.

VI. The Army Corps in Battle.

The French regulation lays down that during the approach: " The corps commander controls the movement of his force by fixing the successive lines to be reached by the advanced guards, by the head and by the tail of the main body."

" Contact is made by the corps cavalry and by the advanced guards."

The engagement " is the work of the first echelon . . . comprising generally, in addition to the advanced guards, the leading elements of the main body and all the artillery necessary. The corps commander directs the engagement. He assigns to the divisions of the first line their direction and their zone of engagement, and prescribes the attacks destined to verify the solidity of the enemy front. He supports or reinforces the divisions with the artillery at his disposal. At the same time, in view of the ultimate attack, the corps commander tightens up his dispositions and takes all the requisite measures in regard to the supply of ammunition; in principle he will only deliver the attack when he has sufficient means in hand." In the conduct of the battle the corps commander " engages his reserves, either by putting them at the disposal of commanders of the first line divisions, or, if he acts with a complete division, by inserting it on a part of the front where he wishes to make an effort. In other cases, with a view to nourishing the battle, he employs the second line divisions to replace the exhausted divisions of the first line. The reserves will take the place of the first line units either by leapfrogging or by relief." The prescriptions in F. S. R. on the employment of reserves are far less definite, and more diffuse. The French seem able to express all that is necessary in a quarter the space and without allowing the framework to be obscured by a mass of detail.

VII. The Division in Combat.

" The decision to attack ought to be previous to the engagement; it results from the mission given to the division."

During the approach " the divisional commander moves with the main body. He fixes the successive lines to be reached by his advanced guards and by his main body."

"The approach should result in placing the division facing its objectives; the troops charged with an enveloping attack take up in good time the necessary space so that they have only to deploy straight in front of them."

Making contact and engagement.—"The action of the advanced elements which first make contact is completed by the advanced guards. In face of an adversary in position and whose line of fire offers voids, the advanced guards usually overcome—by outflanking—the local resistances which the advanced elements have been unable to destroy. Having arrived in front of a continuous resistance, they act prudently and begin by installing themselves solidly on the ground. The divisional commander deploys his main body either on the front marked out by his advanced guards, or in rear."

"The divisional commander follows, close at hand, the operations of the advanced guards. . . ." "When he considers that the enemy present to him an advanced line, he endeavours to clear up the situation. He orders, to this end, partial action on certain objectives chosen by reason of their effect on the course of operations (observation points, tactical localities) and of the possibilities of attack which they offer to a limited strength in infantry. He keeps in hand the main body ready to intervene. In case of success he continues the advance by similar methods, combining manœuvre and fire. Having made contact with a position which appears to be seriously defended, he establishes his division on a solid front of deployment, and makes his dispositions for the attack."

The attack.—"The division assumes during the course of the engagement its battle disposition, in view of the attack. The disposition of a division essentially comprises a line of combat, the artillery, and the divisional reserves."

"The line of combat is composed of a part of the infantry, eventually the tanks, and sometimes elements of artillery. The whole of these elements is placed under the orders of one chief . . . in principle the commander of the divisional infantry. The infantry of the line of combat is placed under cover facing its objectives; it is distributed in several echelons, in such a way as to be able to nourish the attack and to manœuvre. The tanks are disposed in view of their intervention against the principal objectives. . . . If a deep progression is aimed at, it is necessary to distribute the tanks in several echelons." "The divisional commander divides his artillery generally into two parts:—

"One, termed for *direct support* . . . the other, termed for *general action*, which enables the divisional commander to influence the course of the battle by concentrations of fire on particular points, and which most often will continue, by protective fire as it is termed, the direct supporting fire."

"The divisional commander if he has to manœuvre should keep a complete regiment (three battalions) in reserve.

"The infantry constitutes its first echelon in such a manner as to develop to the highest degree its fire power, but avoiding all density which might risk increasing its losses without advantage.

"The reinforcements should be made for preference in favour of the elements which are advancing, in order to aid by manœuvre the fractions which are temporarily held up."

The French regulation here seems scarcely emphatic enough on the folly of direct reinforcement.

"If the enemy maintains himself on his positions, the attack is continued by the assault." "The assault is made by the first echelon." "The assault takes place either at a time fixed, or on a given signal." The French regulation is here dealing with the encounter attack. The soundness of its conclusions may be questioned. Surely experience has shown that the pre-war idea of a general assault was false to reality, and when attempted led to costly failures. The French doctrine here is out of touch with their infantry regulations which pointed out that "the centres of resistance are distributed both in breadth and depth. Thus the attack is a progression by the use of fire, intermingled with small local assaults and continuing until the allotted objective is gained." The opportunity for assault is momentary and must be instantly seized. A general assault allows the moment to be lost.

The French regulation is on sounder ground when it emphasises that "the attack is carried thus from one objective to another, without troubling about alignment with the neighbouring attacks, with the sole preoccupation of reaching the final objective."

The French teaching on the subject of the exploitation of success as distinguished from the final pursuit, is interesting.

"So long as the final objective has not been reached, every success obtained is immediately exploited to the full, either by virtue of orders from the command, or on the direct initiative of subordinates. In order to direct these latter, and to ensure the *liaison* of the different arms, it is a good thing to outline in the orders the principal manœuvres of exploitation foreseen and to echelon the dispositions in consequence."

"The exploitation is carried out :—

"*In breadth* in order to overthrow, by means of a combination of frontal and flanking actions, the parts of the enemy position outflanked by the advance which has been effected, and thus to enlarge the breach.

"*In depth* in the assigned direction, whilst covering one's flanks, but without regulating one's advance by the held-up units." "The exploitation devolves, in principle, on the troops of the first line who are in fit state to fight, reinforced in the necessary measure by fresh units; the played-out elements, maintained on the position conquered, give to the troops who have passed through them the support of their fire; they organise this position and pass into reserve. The manœuvre of exploitation continues by successive bounds up to the final objective assigned to the division."

"If the beaten enemy abandons the contest and retires in disorder, the pursuit begins. . . . It is begun by the troops of the first line preceded by the cavalry who endeavour to pass to the front and by aircraft which reconnoitre for the advance."

The explanation of the phase of exploitation is certainly clearer than in F. S. R., but the processes which are necessary to fulfil both phases are dealt with not only more fully, but also more definitely, in F. S. R. It would appear that the French contemplate the exploitation in breadth being executed by the leading troops. Surely such counsel may lead to a failure to exploit the penetration in depth to the fullest possible extent. The two functions should be executed by distinct echelons or bodies if confusion of purpose is to be avoided. Unity of purpose is the key to successful exploitation.

In the case of pursuit, tanks are surely more effective than cavalry in the first stages, at least, before the enemy's defences are entirely broken.

Intercommunication.—"The principle of its organisation rests on the establishment of an *axis of intercommunication* pushed as near as possible to the fighting line." "On this axis is established an *advanced information centre* directed by an officer of the divisional staff and intended to keep the divisional commander informed as to the progress of the action and the situation of the troops in the line. . . ." "The advanced information centre is frequently established alongside the commander of the divisional infantry who can utilise it advantageously for his *liaison* with the divisional commander; in certain cases, it can be pushed further forward to allow of direct observation of the battle field."

When it is remembered that the early gaining of information is the crux of modern battle, and of exploitation in particular, it may be conceded that the French have thought out this problem more scientifically than we have done. Their appreciation of these fundamental facts is also illustrated by their use of ***liaison*** forward for infantry—a reform advocated by the present writer in his lecture at the Royal United Service Institution in 1920, but not yet adopted in "Infantry Training" as issued.

Defence.—"The essential part of the position of resistance is formed by its exterior edge which is termed the 'principal line'; the principal line is generally doubled by a line of supports. The one and the other are held by the companies of the first echelon. In rear, other positions shelter the reserves of the battalions and regiments of the line of combat; this organisation should enable an easy handling of the reserves to nourish the firing line or to counter-attack; moreover, they form a final line of resistance in the case where the enemy has succeeded in penetrating and maintaining himself in the interior of the position."

It is curious that the French, ever the exponents of movement rather than of stationary fire, should contemplate, as a normal case, the reinforcement of the firing line. The difficulties and doubtful wisdom of such

reinforcement during battle have been proved by experience to be so great that one feels F. S. R. is wiser when it treats such reinforcement as an exceptional measure. It must be remembered, however, that French practice is usually in advance of their official theory expressed in the regulations.

In summarising one's impressions of the French regulations, it might be said that they are distinguished by a clarity of thought and expression, and a grasp of the essential outlines of the subject, which denote minds able to analyse a multitude of considerations, to establish their proportionate values, and finally to arrange them in a scientific framework. On the other hand, if this mastery of the subject is lacking in F. S. R., the latter, true to racial characteristics shows to advantage in certain of the practical methods.

MODERN DEVELOPMENTS IN PHYSICAL TRAINING.

By L. C.

IN the present day Physical Training plays an important part in the soldier's life. Probably the strongest of the many new impressions on the recruit's mind is that left by his experience of the course of instruction in Physical Training; and throughout his service he has occasion often to renew his acquaintance with this particular form of education.

Accordingly, a knowledge of the practice and to a lesser extent of the principles of the recognised exercises, etc., forms a part of an officer's duty. But, apart from a necessarily limited number of experts who have undergone special courses of instruction, there are probably many who have not been in a position to follow the interesting developments which have taken place of recent years in the system of Physical Training in the Army. It is hoped, therefore, that a brief survey of the present situation from a layman's point of view may not be inopportune.

In order properly to understand what has been accomplished, it will be convenient to hark back to the conditions obtaining in the Services twenty or thirty years ago. There existed in those days a system of Physical Drill which was considered on all hands as admirably conceived and efficiently executed. And, so far as the system went, it may at once be admitted that this verdict was justified by the facts. The object of the excellent scheme of exercises was to convert the weedy, undersized youths who represented the raw material of the Army into the sound, healthy, well set-up men who so proudly filled our ranks.

But this was not in point of fact going very far. The Physical Drill of that day was lacking in an essential element : the physical side of the human complex, the likes and dislikes, hopes and fears—the mind of the man, in short—was ignored.

There were other shortcomings in the system. Too little attention was paid to the co-ordination of his physical training with the purely military education of the soldier; and some of the exercises in vogue were imperfectly conceived or faulty in execution, and so forth.

But the intrinsic weakness, as has already been mentioned, lay in the fact that the training as a whole was too mechanical in character and too limited in scope. It was not realised, or at any rate not taken into consideration, that the human atom is composed of two elements—mind and body—inseparably mingled and connected. No appeal was made to the mental side to assist in the development of the physical.

But public opinion in and out of the Services expressed itself well satisfied with the condition of affairs, and the Army system, with all

its limitations, formed the model for the physical drill, free gymnastics, and so forth which were then coming into fashion in schools and institutions for the young.

With the passage of time, however, the trend of ideas took a fresh turn. A new phrase, " Physical Culture," began to be heard among men who took an interest in the development of bodily powers, whether from the athletic point of view or from the purely health standpoint. A whole host of teachers of " Physical Culture " began to advertise their wares, starting with the system of a well-known strong man, which enjoyed considerable popularity at one time. This system, which is more or less typical of the rest, was based on the principle that by concentration of the will on any designated muscle or muscles, any desired degree of development of those muscles may be achieved—the once-popular " grip " dumb-bell was, so to speak, a concrete epitome of the system. Other " professors " presented variations of their own, but, generally speaking, the exercise of the will to control the movements of the muscles was the common basis of all " Physical Culture."

The important point is, however, that this development marked a stage of material progress; for the use of " will-power " constituted an admission, however partial and possibly unconscious, of the necessity for associating the psychic with the physical in the training of the human body. And inasmuch as some of the more advanced Physical Culturists carried their use of the will into purely mental regions—character-building, in fact—to Physical Culture must be given credit for the first indications of the principles on which, as will be shown, all Physical Training in the Army is founded to-day.

It was at this stage in the history of our subject, and before the new ideas had been able to exercise much influence on the official procedure of Physical Drill, that the cataclysm of war put a term to all progress for a time.

As might be expected, the first shock of war relegated Physical Training to the background, in favour of the more serious business of fighting. But it was very soon discovered that this was a mistaken view of the case. Indeed, the experience of war conditions quickly showed that, so far from there being any diminution in the importance of Physical Training, its sphere of usefulness had vastly increased. In fact it is not too much to say that, long before the end of the war Physical Training in its various manifestations came to be looked upon as an indispensable adjunct to the preparation of the troops for their work in the field.

The main lines of effort of the Physical Training organisation during the war may be classified under three heads: bayonet-fighting and battle-training, recruits' training, and convalescent work at bases and depôts.

In framing schemes to meet these widely varying requirements two points had always to be borne in mind. First, time was an element of paramount importance; and, secondly, the material to be worked on

was of the most inferior description, consisting often of physically doubtful recruits, half-dazed men from the trenches, and sick, partially paralysed or shell-shocked convalescents.

Tested in these stringent conditions the methods of the regular official Physical Training system revealed many defects and deficiencies. Exercises of a mechanical nature, such as some of those in the Swedish drill, proved little better than useless when tried on the human wreckage of the trenches.

Consequently it became necessary to devise new means not only of putting life into unused or atrophied nervous and muscular tissues, but also of revivifying dulled and dying mental faculties. Nay, more, it was found that until the weary, war-wracked mind could be brought into play, until the intelligence could be awakened and interest aroused in the business in hand, no exercise, however ingeniously conceived, was of real benefit. But as soon as by any stratagem—the playing of the simplest games was often most effective—the wandering attention could be arrested, the dazed brain stimulated to effort, progress began.

Once the principle was grasped that the Physical Culturists were, after all, on the right track, and that mind and body must be treated as one, development was rapid. The Physical Training organisation became also a school for mental training; the body was reached through and with the mind. But the framers of the new system did not fail to profit by the mistakes of the Physical Culture school. The share of the mind was not confined to the stimulation of the muscles: the qualities of the mind itself received their due meed of attention. In fact, character-building formed as much part of the system as health improvement.

Success crowned these efforts. The same principle of enlisting the aid of the intelligence and appealing to the mental faculties proved equally effective in quickening the training of the healthy man in, say, bayonet-fighting, and in bringing back to normal life the shell-shocked wreck from the trenches.

On the return to peace conditions the obvious course was to turn the experience of war to good account, and to revise the official Physical Training on the foundation of the principles so effectively employed during active operations, and this was done.

We may, therefore, now turn our attention to the system of training as it stands to-day. To start with, we find that the whole scheme of instruction is based on certain bed-rock principles, the main points of which may be described roughly as follows:

Education of the body to attain the best results must be conducted with and through education of the mind; perfection of health and strength is of little avail unless accompanied by understanding and practice of the higher mental qualities, as exemplified in ideas of courage, truth, discipline, loyalty, and so forth; in a word mind as much as matter comes within the province of the "gym." Further, to secure these ends, the man must be treated as a reasoning and reasonable being, his intelligence cultivated, his interest stimulated, his personality recognised;

it must always be borne in mind that the object of the training is the evolution not only of a good soldier, but also of a good citizen.

The application of these principles in the methods of work follows the same plan as that of the war training—the use of " association of ideas." With each form of exercise particular ideas are associated, and this is true of every detail. For example, in an elementary exercise, such as (in official phraseology) " Head bending backwards," the man is taught to hold in his mind the ideas " poise and balance," leading later on to " alertness," and so on.

Again, the development of exercises designed to ensure the co-ordination of the physical with military training has been given considerable attention. Thus, a lecture will be given to a class of recruits on the modern battle, with explanations of actual experience of going into action, " going over the top," etc. The class will then be exercised across country or with artificial obstacles constructed to represent trenches, etc. At the same time the association of ideas is kept well to the fore, stress being laid upon courage, resource, endurance and similar conceptions as accompanying appropriate movements of jumping, climbing, running, etc., which are performed in the course of the exercises.

Lastly, we may conclude this survey with a glance at one of the most interesting features of the new methods. This is the use made of organised games, football, hockey, etc., as a regular part of the instruction, for the purpose of combining character-building with health development. Team games of this description provide a simple and direct method of teaching the principle and practice of " playing the game " and " playing for one's side," phrases which disguise in the usual English manner the virtues of unselfishness, self-sacrifice, obedience, loyalty and the like, all most valuable qualities in the character of the soldier and the citizen.

This team principle is not limited to relay races, basket-ball, hockey and such games. It is further utilised by the organisation of men under training in groups called " sections." All the work is carried out on a system of competition, not among individuals, but among " sections." Thus a man learns to feel the same pride in earning points for his " section " at some individualised sport, such as boxing, as he had already felt in making a goal for his side (again the " section ") at hockey.

Indeed this particular " team " system and the carefully inculcated disregard for personal profit and advancement which always accompanies the working of the " team " principle are considered so material in importance that the ideas are carried to their logical end. When, after many strenuous contests, one " section " at last emerges the winner for that period, the reward is no silver cup, money prize, or even medal, but a simple flag of bunting with the regimental crest.

With this very characteristic example of modern developments we may fitly close this sketch of present-day conditions in physical training. It will no doubt be admitted that substantial progress has been achieved, even if perfection is yet to seek; and it is permissible to look for further and more important developments in the future.

THINGS ARE NOT ALWAYS WHAT THEY SEEM.

By Major-General W. D. Bird, C.B., C.M.G., D.S.O.

THE conduct of war is, perhaps, mankind's greatest speculation, and, although most people are painfully aware of the difficulty of making prosperous speculations in other affairs of life, few seem to realise the doubts and hesitations that necessarily beset every commander, whether high or subordinate, when in the field.

The following anecdotes may serve to illustrate how these uncertainties arise.

The first incident took place in February, 1900, during the South African war. The Boers had seized and broken up a railway line somewhere in the bush-veldt. A small force of Colonial troops, consisting of about 500 mounted and 600 dismounted men, with one 12-pounder and two mountain guns, which had been raised five months previously and was officered by British regulars, had therefore been sent along the railway to push back the enemy and repair the permanent way and bridges. The bush-veldt in question consists of an unending forest of stunted trees, interspersed by thick clumps of thorns. The forest grows over all the sandy valleys and rocky hills of the district, and is not, as a rule, sufficiently dense to prevent mounted troops from riding through it in line, but the thorns are impenetrable and must be avoided.

For a couple of months previous to this forward movement the British had kept touch with the enemy by means of an armoured train; and, to cover the concentration of his troops by rail within striking distance of the enemy, the British commander now sent two mounted squadrons and a body of dismounted men, perhaps 250 strong in all, under a Major Saxon—the name is fictitious—to the support of the armoured train.

Saxon received orders that he was to occupy a semicircle of scrub-grown rocky kopjes running partly across a valley, eight miles wide, which was followed by the railway; and he was to repair a railway bridge of 30 yards span which had been blown up by the enemy, and was lying across a spruit, that is a watercourse, close to this position. He was also told that a Boer commando, which was believed to consist of from 1,200 to 1,500 men, with one 10-pounder Krupp gun, was in a laager behind another rocky J-shaped group of hills which lay about two miles to the south of the broken bridge.

One afternoon, at about 5 p.m., the little British advanced guard duly occupied the central hill of the semicircle known as Basuto kopje, which overlooked the broken bridge, driving away a few Boers; and when

outposts had been posted, and the men were settling down about a quarter of a mile from and behind Basuto kopje, they had their baptism of artillery fire, for the Boers sent a few shells towards them; but without effect.

One of the first and most powerful sensations that are experienced by any independent leader in the field is the craving for information—he longs to know all about the enemy. Next morning, therefore, after having gazed for some time at the enemy's position through the clear air from Basuto kopje, Saxon decided that steps must be taken to find out the size and position of the laager, which was concealed by the J-shaped ridge, and as to whether it was fortified. A trusted friend and subaltern, Lieutenant Dane—this name also is fictitious—was consequently told what was required and given a free hand as to the manner in which the venture was to be carried out.

Dane chose an ex-British regular non-commissioned officer and two Cape colonials to accompany him. At about noon he started on his errand, riding through the bush towards the hills which formed the western boundary of the valley, and the little party was soon lost to sight in the trees, which were in full leaf.

The Boers had relapsed into inactivity after firing two more rounds from their gun during the morning, and the afternoon, consequently, was passed without incident in preparations for the repair of the bridge. Shortly before sunset, that is between 6 p.m. and 7 p.m., Dane and his companions rode into the bivouack just when Saxon was becoming anxious as to their safety, and he went forward to meet them.

Of course Saxon's first words were: "How did you get on?" "We're for it," said Dane with suppressed excitement. "There are *two* laagers, each containing about 1,500 men. The first is where we thought, the second is in the bush about four miles to the south-west of it. They have evidently brought up reinforcements, are hiding them, and going to attack us to-night."

"Oh lor!" said Saxon.

Then a thought struck him—"Are you sure that there were two laagers?" he asked. "Quite sure," said Dane firmly. "We went quite close to each of them. The approaches to the first are open, the second is in thick bush. You can ask the men if you don't believe it."

This, of course, was quite impossible, and after a further talk of about five minutes Dane remarked tentatively: "I think I'll go and look after my horse and have some food myself, as I suppose that you will retire before it gets quite dark."

Saxon hesitated for a few moments, as well he might, for the situation was by no means pleasant. On the one hand, Dane was a very brave man, who had certainly done as he had narrated and twice closed on enemy laagers, and it was not at all impossible that the Boers had sent up reinforcements on hearing of the movements of the British. On the other hand the troops under his orders were still raw, and in the few skirmishes that had taken place the Boers had so far come off best. If

he fell back and the report proved to be false, the confidence of the Colonials, who were naturally watching their British officers closely and with curious eyes, would receive a shock. Further the Boers, whose spirits would be raised by the retirement of the British, might occupy Basuto kopje and the neighbouring hills, and the British might have to fight hard to retake them. After all, he argued to himself, the Boers were a cautious race and did not usually leap until they had looked with care. Probably, therefore, they would reconnoitre before attacking or even moving out for the purpose of cutting him off, and the attack or turning movement, if made at all, would not take place until the next day. By then the dismounted men could, if necessary, have been put into the armoured train, and the mounted troops could look after themselves.

"No," he said, "I'm going to stay here." "Oh," blurted Dane angrily, "then you *don't* believe me." "I am not sure," said Saxon, "and in any case I don't think that they will attack to-night." "Oh, well," grumbled Dane, "*you* are responsible, not I. But we shall be scuppered." And off he went in high indignation and would not speak to Saxon for the rest of the evening.

By this time the news had spread among the men, so Saxon warned the other officers that an attack might be made, told them to caution the picquets, and arranged that these should be visited every hour.

The moon rose after midnight, so that there would be no difficulty in riding through the bush if the enemy then so desired; but the Boers made no sign or movement. Next morning patrols went out at dawn, but found no trace of the enemy either to the flanks or rear of the little force. At stables, therefore, Saxon said to Dane: "My lad, you and I will ride out after breakfast to the top of that hill," indicating a high kopje, "and you shall show me the new laager."

At 10 a.m. the two went off with the three men who had been out on the previous day, and duly climbed the hill from which the area where the first laager, and also the second laager which had apparently been located, could be overlooked. After carefully examining the ground through his field-glasses Saxon put them down and said: "I can't see any sign of your second laager." "No?" said Dane; "they must have retired." Saxon laughed: "I'll tell you what you did: you lost your way in the bush (an easy thing to do owing to the fact that one must continually make small detours round clumps of thorns) and struck their laager twice." "I believe that you are right," said Dane honestly. "We went first towards the southern face of their laager and then, as I thought, moved south-west and found the second one. But it seems that we must have ridden in a semicircle and then struck the eastern face of the one and only laager, for, as you can see, the bush extends right up to its eastern side."

The second incident took place in January, 1916, in Mesopotamia.

Mesopotamia may be a blessed word, but Irak, as it is now called, is far from being a blessed country. In the long, broiling summer the

land is tortured by most of the plagues of Egypt; in the short winter, rain or sleet, accompanied by an icy wind, falls in such sheets that the rivers and canals are soon converted for the moment into brimming torrents, and the desert into a muddy lake. In addition, except when rain is falling, a mirage, which is often accompanied by a haze of dust blown up from the desert, magnifies and distorts every object in a most disconcerting fashion.

At this period General Townshend had been shut up in Kut-al-Amarah for about seven weeks, and the relieving force, under Sir Fenton Aylmer, had been checked by the Turks, in a battle which ended in a regular deluge of rain, at Hannah, a locality on the northern bank of the Tigris and some 25 or 30 miles from Kut-al-Amarah. Here an immense and dreary marsh, the Suwaikiyah, lies to the north of and less than a mile from the yellow, turbid stream of the Tigris, wide as the Thames at Westminster. To the south of the river the brown flat desert, broken here and there by mounds or the banks of disused canals or by marshes smaller than the Suwaikiyah, extends as far as the eye can reach; but where water which is fit to drink has lodged or can be obtained near the surface of the soil, there is also an occasional shrine raised to some holy man, or a fort of mud erected by an Arab Shaikh who has accumulated the funds to do so through successful raiding of his neighbours.

As everyone knows, Kut-al-Amarah lies in a loop of the Tigris, just at the point where a large effluent, the Hai, leaves it to join the Euphrates at Nasiriyah, more than one hundred miles away to the south as the crow flies.

Casualties and sickness had now so far reduced the strength of the relieving force that, after the repulse at Hannah, General Aylmer could count only on about 12,000 bayonets in his seven infantry brigades, 1,300 sabres, a couple of aeroplanes and 46 guns; and the spirits of the men had been dashed both by failure and by the hardships which are inseparable from campaigning without shelter in miserable weather. All the troops, except one infantry brigade, about 1,800 bayonets, 200 sabres and 14 guns, were on the northern bank of the river, the detachment having been placed on the opposite shore mainly for the protection of the shipping, on which the force was dependent for its supplies and ammunition. Moreover the only means of moving units from one bank of the Tigris to the other were two or three small river steamers, to each side of each of which a lighter was lashed, and some native barges, called mahailas; for the rest of our small fleet of transports had been sent down the Tigris to bring up certain reinforcements which had reached Basrah, and our bridge of boats, which had been broken by a steamer, could not be repaired owing to gales and floods.

On the Turkish side it was thought by the British that there were about 12,000 troops at Hannah, 11,000 or 12,000 dismounted and mounted men were investing the force under Townshend, about 2,000 of whom, mainly horsemen, were on the right bank of the Tigris below Kut-al-

Amarah and east of the Hai; but it was believed that a considerable accession of strength might at any moment be received by the Turkish army.

During the siege a long correspondence in cipher had taken place by wireless between Townshend and Aylmer, and the staff of the latter were, therefore, electrified when, at about 5 p.m. on the 26th January, a message was received in " clear " that one Turkish division, estimated as numbering 6,000 men, was moving from the enemy's camp above Kut in the direction of Maharijah, a place on the Hai some five miles to the south of Kut-al-Amarah, " where we can see a bridge being constructed on mahailas." It was also stated that the Turks apparently intended to operate against the British troops that were on the right or southern bank of the Tigris.

A strong gale had prevented aerial reconnaissance during the day, and, as was natural, accepting Townshend's conclusion without demur, Aylmer at once took steps to carry out the transfer of the bulk of his force by steamer to the right bank, intending to leave only 3,000 infantry, the majority of the cavalry and 26 guns to contain the Turks at Hannah; and it was hoped that the troops would be across the river before the Turks could bring up guns for the purpose of supporting an offensive down the right bank. The commander of the group on the right bank was also directed to push out cavalry westwards early on the 27th, who were to remain in observation of the enemy.

The cavalry were duly pushed out, but failed to obtain contact with the Turks; the airmen in our two aeroplanes that were sent up on the morning of the 27th saw no signs of the division that had been observed by Townshend, but it was noticed that one mahailah (a native barge) was lying at Maharijah; and an intelligence agent who came from the direction of the Hai confirmed the reports that had been made by the airmen. Townshend, however, who had now reverted to cipher, telegraphed, at 11 a.m., that the division had crossed the bridge and disappeared southwards, perhaps bound for Nasiriyah. In the afternoon he stated that the Turks were marching away from the bridge as late as 1.30 p.m.; and in the evening that a column of transport had followed the division, and that four or five mahailas could be seen in the Hai some 10,000 yards to the south of Kut-al-Amarah, as well as strings of men carrying poles, perhaps for the construction of a footbridge.

General Aylmer now began to wonder whether the movement that had been observed was a ruse made in order to induce him to move troops to the right bank of the Tigris and thus facilitate the delivery of an attack by the Turks from Hannah, more especially as, in the afternoon and evenings, bodies of men were reported to be in motion on the northern bank of the Tigris towards the enemy's trenches at Hannah. One infantry brigade had crossed the river, and a second, with other troops, was allowed to continue the passage; but orders were issued that four brigades should remain on the left bank and that especial precautions should be taken to guard against a surprise here. The night of the

27-28th January, however, passed without much incident, except that the Turks sent up some rockets from their lines at Hannah.

The aerial reconnaissance made on the morning of the 28th found that there were three camps on the Hai at Maharijah, each occupied by a force of about one battalion. No bridge was visible, but there was a landing stage on the left bank, the one nearest the British force under Aylmer, to which troops were being ferried in mahailas; and this news was again confirmed by an agent who had been in the neighbourhood. It seemed then as if the observers in Kut had been mislead by the effect of the mirage. Townshend, however, telegraphed at 11 a.m. that troops could be seen on the bank of the Hai, and that it appeared as if the division was now taking up a position there. It was suggested, further, that perhaps this division would form the general reserve, or offensive wing of manœuvre, of a group which was destined to hold the line of the Hai against the relieving force. At 1 p.m. Townshend reported that what was thought to be the head of a column had been seen at noon marching towards Imam Ali Mansur, a shrine some six miles to the south-east of Kut. At 6.30 p.m. he again sent a message that the advanced guard of the division, consisting of three battalions, had passed out of sight in an easterly direction, but that the main body was still at Maharijah, engaged apparently in moving stores over the Hai.

The day of the 28th and night of the 28-29th passed without other incident at Hannah than mutual harassing fire, but a strong northerly gale prevented aerial reconnaissance on the 29th. On the 30th the airmen reported the presence of camps which might contain from 1,500 to 2,000 men in localities to the south of the Tigris, seven miles to the east of Kut-al-Amarah and a dozen miles from the British relieving force; but there was no bridge visible across the Hai. It was therefore now quite certain that the Turks were ferrying troops slowly over the Hai and that the division and its bridge had, as had happened several times before, been but an unsubstantial pageant of the mirage.

THE EMPLOYMENT OF MACHINE GUNS WITH A BATTALION OF INFANTRY:

WITH SPECIAL REFERENCE TO THE INDIAN FRONTIER.

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A LECTURE AT RAWALPINDI, 6TH DECEMBER, 1921.

IN dealing with the conduct of machine guns when these form part of an Infantry Battalion I think we want to be clear in our minds that machine guns are not Infantry. They are, of course, no longer an arm by themselves, but are still a weapon by themselves, and, in the days before the Machine Gun Corps was formed, the Infantry training of those days, that is, the Infantry training of 1914, said they were a powerful auxiliary to Infantry and well adapted for close co-operation with Infantry. It was admitted they were not Infantry.

I am not going into details of the different characteristics of the gun and why, in view of these characteristics, it is somewhat unlike Infantry; it is not unlike Infantry in its shooting because ideal Infantry should often be able to switch its fire and to concentrate the same kind of fire as machine guns on to its target, somewhat as the machine gun is able to do, but where it is absolutely different is that the weapon itself is so heavy, with the result that its loss of mobility becomes an important factor. Machine guns must have animal transport to carry them for any distance; consequently, they are not so mobile as Infantry. It takes some time for them to come into action and some time to come out of action, the amount of which may vary from about two minutes to ten minutes. Machine guns constitute, of course, a fire weapon, pure and simple; the Infantry rifleman's weapons are his rifle and his bayonet, and he can therefore fight, and is menacing, when he is moving, whereas the machine gun can only fight when it has halted and come into action.

Throughout the late War, machine guns were looked upon, both by the Germans and by ourselves, as a connecting link between Artillery and Infantry, and I think that that is still admitted to be the character of the weapon. They are not Infantry although they approximate in a great many ways to Infantry, but still less do they resemble Artillery. Their fire is the poorest substitute for Artillery fire when they have to deal with an enemy behind cover, in that they cannot dig up a target when it is behind cover like Artillery or trench mortars can. Machine guns, therefore, are at their worst when they have to deal with

an enemy behind cover and good when they have to deal with an enemy in the open, and better if the enemy is moving in full view. Consequently, the use of machine guns is distinctly limited in the support of an attack, and, I submit, it can never attempt to replace Artillery or Mortars. On the defensive, it has proved itself the finest man-killing weapon that was ever invented, more especially in those cases where you have an enemy standing up to come at you over certain favourable types of ground, such as flat, open ground, or muddy ground, impeding movement. With regard to ranging, machine guns can only obtain their range and get on to their target by the actual observation of the strike of the bullets on the ground, or their effect on their living target, whereas artillery can carry out their ranging by shell bursts in the air, and so are not dependent upon the ground strike. A machine gun is quite accurate enough to hit any target up to extreme rifle range, the difficulty is in laying the gun so as to do so.

That machine guns are felt to be a necessary weapon in a force, especially in a force engaged in Trans-Border Warfare, was brought home to me by the late C.R.A. of the Waziristan Force, writing to me last February, to the effect that it was considered that there was a distinct gap between Infantry and Artillery in action, so long as the Waziristan Force had no machine guns with it, and that this gap would be adequately filled by machine guns. A company of the Machine Gun Corps has since then worked with the Wana Column in Southern Waziristan, but they have, I believe, had very little fighting to do, and so, probably, it has not been an adequate test.

Now, as to some disadvantages of machine guns. One was brought home to me by a Brigadier, who had been operating on the Khaibar Line during the last Afghan War. He said, that the worst of machine guns was the trouble they gave owing to being so slow, and especially in the case of withdrawals by the Infantry. He said he then found that they were apt to get in the way. That may have been want of training amongst the machine gunners, or it may have been that he expected his machine guns to remain in the firing line until the firing line itself was getting away, which is not the way that machine guns should be handled, according to the teaching of the Mountain Warfare School. Another disadvantage is their liability to stoppages; this is less than with other automatics, and, with good ammunition and care, the difficulty is slight.

As regards how to get the best out of a gun, what are its best ranges ? In my opinion they are from about fifteen hundred to about five hundred yards. I am not going to venture to criticise the ranges laid down in Field Service Regulations, 1920, written, presumably, by the Machine Gun Corps for the M.G.C., and not for Infantry M.G. Platoons; this says . . . . that the ranges of machine guns are, close range, up to 800 yards; effective range, up to 2,000 yards; and long range, up to 2,900 yards. Under very favourable conditions 2,000 yards may be an effective range for direct shooting at a live target; say, where you have

open ground and clear daylight, when you can see the strike of the bullets. In misty weather, or even in rough country, it would be very difficult indeed to carry out effective shooting at fleeting targets at 2,000 yards. Inside of about 500 yards, in my opinion, unless the guns are extremely well concealed, isolated machine guns do not hold their own against good, dispersed riflemen or Lewis guns. If the gun is really well concealed, or if it gets fire superiority by surprise, then it remains a most deadly weapon, and the more deadly because of its close range; but, otherwise, I think it would get knocked out. Certainly, when going out of action, there is the probability that the team will disclose their gun and they or the gun will be knocked out. The inner limit of greatest usefulness is really, to my mind, about 500 yards, and in this opinion I think I am supported by the Commandant of the Mountain Warfare School so far as fighting over the Border goes.

Inside a range of 1,000 yards, the machine gun, more especially if firing over open ground, is at its very best, and if one accepts the zone of 1,500 yards to 500 yards as that in which aimed machine-gun fire should usually be turned on, then this will give us a line as to the distribution of the guns in action.

An instance as to how machine guns affect the situation at this sort of range under good conditions was brought home to me in France right at the end of the main German advance in the spring of 1918. Our troops were holding Aveluy Wood and the lower road from Martinsart towards Albert; a section of four machine guns was concealed in a chalk pit and were in a position to flank and enfilade the right of the Division on a ridge running parallel to the Front. The Germans came up the forward slope of that ridge several times on the 3rd April, 1918, and every time they were stopped by the fire of these machine guns, which were only finally located by German snipers creeping up towards the nearest end of Aveluy Wood. These gave them a bad time at 200 yards, but the guns remained in action all day, and, as evidence of their not being a weapon liable to breakdown, if served with good ammunition in this case from six thousand to ten thousands rounds per gun were fired from these guns and yet they had only two or three minor stoppages. They knocked out 300 Germans of one battalion, which was attacking, and one or two Germans who were taken said it was the fire of these machine guns which held up their attack.

Another instance, from this country, where, I believe, machine guns acted favourably, was at Spin Baldak, in the late Afghan War. The surroundings of Spin Baldak were an open plain, covered with small stones and shallow watercourses. About 200 Afghans had come out and threatened a charge on the flank of the right leading battalion. Two machine guns, placed to support the attack, caught these Afghans at about 1,000 yards and knocked out about half of them in a few minutes. The remainder dispersed under fire in the direction of Kandahar.

As regards the distribution and movement of machine guns in

action. A machine gun is useless on the move, but can be very useful provided it is ready to fire. As few movements as are necessary should be carried out, and these necessary movements must be made with the guns distributed in depth. The amount of depth will for practical purposes depend on the number of guns available, but some depth is essential; otherwise, if all the guns move together none are ready to fire during their movements, there is the maximum amount of defiladed ground, they are all firing at the same range and all are equally committed from the outset.

The same principle applies equally in advances or in withdrawals. As Colonel Villiers-Stuart describes it, "a withdrawal or retirement in Trans-Border Warfare is a 'Moving Defence.'"

These successive echelons of guns should be (special factors such as ground not being considered for the moment) at a certain best distance apart. The question is, what is this best distance? If we take it for granted that our best zone for killing with machine gun fire is from 1,500 yards inwards, I think these successive echelons should be 500 yards apart, and take bounds which are multiples of 500 yards according to the number of echelons provided. That would be the ideal distance between echelons, but it must be modified by the ground and the movements of the Infantry. The foremost guns will come into action and start shooting, in the case of a withdrawal, from (about) 1,500 yards down to 500 yards. They then withdraw and the next echelon of guns should start shooting (if they have not already done so by overhead fire) at a range of about 1,000 yards, these also withdrawing when the enemy is about 500 yards from their position, and so on successively. It would seem that the foremost guns should remain firing whilst the enemy is advancing within 500 yards, but there is always the problem of getting the guns away and getting them on to their transport; for a bound of 1,000 yards or more according to whether two, or more, echelons of machine guns can be provided for.

All these movements require that the transport should be very intimately related to the guns and work with them under the control of the officer in charge of the section of guns, or the sergeant in charge of the sub-section of guns, or the gun commander, if you must have single guns in action. The importance of getting one's machine guns in their smaller units to work intimately with their transport is firmly fixed in my mind by the experience of March, 1918. The tendency was for transport to go, or to be sent, back to its wagon lines; and in the meanwhile something would happen demanding a move, either machine gun support required to a flank, or ground being lost to the Germans, and there was no transport there, with the result that many guns were lost from want of intimate working of the transport with the guns. This was partly a legacy from trench warfare.

Now that a Machine Gun Platoon forms part of a Battalion I submit that the fighting transport of the platoon should be differentiated by the Commanding Officer of the Battalion from the remaining trans-

port which may be required to carry out the ordinary routine carrying duties necessitated when the Battalion is in barracks. Otherwise it will hamper the thorough training of the Platoon to work with its transport, and *always* with its transport. This transport will be manned by Indian drivers, and it is important that these Indian drivers and the men of the guns should become intimately acquainted with one another and their way of working—a thing which takes some time.

I have already pointed out that the machine gun is an ideal weapon for defensive rather than offensive use. It has its uses in the offensive, but given certain conditions of ground and weather it is an ideal weapon on the defensive. We used to hear, during the early part of the War, a lot of criticism as to why we did not have so many machine guns as the Germans; I think one reason for our lack of machine guns was that the flat ground of the Continent would strike one as being an ideal country for the use of machine guns, whereas in England, among our hedgerows and broken country, the use of machine guns would not be so distinctly marked. Most of our recent wars, too, had taken place on still more broken ground, on the Frontiers of India and in South Africa, and under these conditions rifle fire is more able to hold its own against machine guns, than it would on the plains of Flanders, North-Eastern France, or East Prussia.

I do not think that machine gun fire is at its very best under the conditions one gets in the Frontier Hills, too much cover exists for individual enemies to work up, who are able to carry out such movements as they wish undisturbed by machine gun fire. But, whichever way your machine gun is being used, either in attack or in defence, I submit that a portion of the Machine Gun Platoon will form a very valuable reserve of fire for the Battalion Commander. There is no form of fire he can keep so readily under his personal control and concentrate in full volume in any direction he may require.

As regards the selection of the gun positions in order to fight on the defensive. A little ancient history, which is perhaps not fully relevant as regards present warfare, may clear the minds of Machine Gun Sub-Unit Commanders. During the late war we had three situations: Firstly, where many trenches existed and these trenches were not very much damaged. Such a situation existed during stationary trench-warfare, or after we had gone back to Reserve lines in 1918. Here the best place for the guns was in the trenches, where you had the guns under proper control and they were in close contact with the Infantry. Properly concealed they were difficult to detect. Secondly, where trenches were few and the ground a mass of shell-holes as during or soon after a Trench Warfare Battle. In 1917, during and after the Battle of Ypres, the machine guns were sited in shell holes, but the results were not so good as when they were able to be placed in trenches; for, in the shell-holes the power of fire, in action, was not so great, and the machine gun fire units could not easily be controlled.

In the shell-holes the individual gun or two guns are absolutely

cut off by themselves, they have difficulty in communicating with anyone, and it is a bad life altogether, bad for *morale*. Moreover, the paths leading up to these shell-hole positions, paths created by carrying parties, are readily detected from the air and show in air photographs. Thirdly, where there were very few trenches. That is the normal situation in most wars, open warfare. In this case the machine gun should utilise what is commonly called " natural " cover—not really " natural," but cover which is not peculiar to war—the roofs of houses, behind hedges, walls, etc.

In all actions where one is not opposed by much artillery fire the value of the machine gun is enhanced. I think on the Frontier a good place for machine guns is in the corners of the roof parapets of houses. A certain amount of improvement may have to be done, but still the extra command and view will justify the giving away of your position to some extent.

Now as regards where these guns, acting defensively, should be placed in relation to the rest of the troops. Towards the end of the War, when there was much Artillery in action, it was understood by both sides that Vickers' guns or heavy machine guns should not be placed in the front line. Trench mortars are even a greater enemy to machine guns than artillery because they are well forward, and, having spotted a machine gun within range they can knock it out without recourse to signalling back. Machine guns could not exist in action when directly opposed by well-handled trench mortars. The German trench mortars took on our machine guns as their special target in March, 1918.

As more and more artillery and more and more trench mortars were used before an attack, it was more and more found necessary to keep the machine guns back during the preliminary bombardment. But, under conditions of normal, open fighting there is not this objection to some machine guns being kept in the front line, and where one is holding one's ground and means to hold it I think some of the guns should be in the front line, but *some* of the guns only. The principle of keeping guns distributed in depth and some in reserve at the disposal of the battalion commander should be observed. Having some guns in the front line was the way in which the Germans used their guns until the middle of the battle of the Somme, when our artillery fire was beginning to get rather intense and they found their machine guns could not live in the front line, and they brought them back. It was especially in the front line that they were utilised to produce those bands of fire which, where they existed, caused so many thousands of casualties to our troops.

Now as regards the special employment of machine guns in Trans-Border Warfare. During an advance, firstly, I think, they want to be ready to help to put out the picquets. Secondly, to command defiles running into the line of advance. Thirdly, to be in a position where they could cross their fire on to the other flank of the line of advance. If the line of advance is along a river bed or a valley, the machine guns on the opposite side of the route should be able to bring fire to bear

across (to the other side of) the route, to inflict loss on targets created by the Artillery whose shells have bolted the enemy from cover. In retirements, the Commandant Mountain Warfare School, considered that machine guns are always to be employed with the second line of Infantry and to keep at least 500 yards from the front line. It may sound very pusillanimous, but the fact remains that the machine guns do take at least two or three minutes to come out of action and get on to their transport, and the transport is likely to be less mobile than the Infantry; so, unless we want to hamper the Infantry, I think it is only fair to say that they should be kept about 500 yards from the leading Infantry, otherwise they will be involved in difficulties which will call for the assistance of the leading Infantry, if the guns are not to be lost. So far we have considered the guns in a retirement in Trans-Border warfare from the point of view of the commander. Now from the point of view of the machine gun officer working with the guns or the sergeant or the man. It is essential that they should themselves reconnoitre the line of retirement, otherwise unpleasant surprises will happen. You will perhaps, for instance, find a place where Infantry can get down, but you cannot get the mules down.

In operating in a valley, it is considered that control is most effective if the guns are commanded in depth down one side of the valley, not astride both sides of the valley. Working in with the Artillery in one of these retirements is very important. One broad principle is that machine guns should be ready to take on possible but not very probable targets, and on the flanks, while the guns of the Artillery are ready to take on all the most probable targets. Machine guns can be expected to take on the less probable targets, which are the more numerous, as the machine guns will also be more numerous than the guns. The machine gun has an all-round traverse, so its fire can quickly switch round. I think it is important that the belt box carrier should be fitted to the guns, just as important as the fitting of the condenser tube and bag. Otherwise an attempted quick switch may lead to a bad stoppage and possible disaster for the gun.

As regards the use of the machine gun in camps over the Border. The guns have a two-fold rôle, the first is to support the outer ring of picquets round the camp, and secondly, they should be in a position to put down a band of fire round the perimeter of the camp itself, and especially to give a band of fire on weak points of that perimeter, such as the corners. The rule is, too, to keep some guns in reserve. If you have all your machine gunners on duty every night then they are not fit to go out to take part in any sorties or minor expeditions by day. As regards the use of machine guns in the clearing of or destruction of villages. In this case, some machine guns should usually be employed to cover the inner ring of picquets close round the village and assist the troops in the village to carry on; other guns can be usefully employed to keep down fire from any towers which are still holding out.

A word as to the rate of fire and the amount of bullets required

on a given front. In 1918 the generally accepted opinion was that 75 rounds a minute was a good sustained rate of fire (for a barrage), and the front on which you got a good effective barrage was 20 yards for each gun, a fairly good barrage 50 yards, and a very weak barrage 100 yards. The latter was chiefly suitable to hearten our Infantry in an attack and was then best put down on selected localities only, not along the front.

I would like to add a few details. *Flash absorbers*, made out of ammunition boxes (and sacking), would, I suggest, be useful on the frontier; if it is required to support a picquet at night, by fixing one of these in front of the gun you will reduce the risk of giving away the position of the gun.

The auxiliary mounting.—This is, in my opinion, rather a failure. It is essential that the gun should be held steady. I remember a company commander trying to fight with one himself and he told me he could not hit his target (an extended line of advancing Germans at 600 yards) as the gun was bouncing up and down with the vibration. That is why the machine gun is rather a heavy weapon; as at present designed, it must drag its heavy tripod about with it, and the mounting must be something pretty solid as otherwise we do not get accuracy of fire. In France, in 1915, one division, with Battalion Machine Gun Sections, had a system in their front line trenches of ammunition boxes with holes cut in them in which it was intended to put the socket of the cross-head. They never had to really try them as it happened.

Range-finders.—Our present scale (in India) is one range-finder for the whole platoon of eight guns. We found one range-finder for four guns was required in France during open warfare and that was when there were four guns forming the unit; one of the lessons of the March retreat was that four guns was the minimum fire unit that could be relied on, so as to have at least two guns left in action after the enemy bombardment and when their targets appeared. On the frontier, however, we can cut this minimum down from four guns to two guns, but for each separate two-gun position a range finder seems necessary.

The barrel casings are apt to disclose the guns in action, they are always shiny and I think it is worth putting a sandbag or puttee round them. We had very elaborate camouflage arrangements in France, where every effort was made to ensure that the guns could not be seen, either from the enemy's direction or the air.

Enfilade Firing.—Towards the end of the War there was more and more a tendency to fail to site the guns so as to hit the ground in front of the firing position. Positions were often selected with the gun given, as its chief task, fire in the direction of the best field of fire, and with no view at all towards the front. I do think it is absolutely essential that there should be some field of fire from the gun straight to its front, that is, the nearest direction of the enemy. The guns

must be able to shoot at least 100 yards and preferably 200 yards to their front. In fog, snow-storms, or bad light, the principle of relying on the flanking fire of adjoining guns can easily lead to the undoing of the guns, which are overwhelmed if unable to defend their own front.

Machine guns, although sited for direct fire, should take measures so that indirect fire can be effectively carried out on their chief line or lines for direct fire. Right direction is the first essential and right range is somewhat less essential. Front line guns can always "search," but it is often dangerous to "sweep." Whilst wishing to avoid loading up the Platoon with too many "extras," I consider machine gunners ought to carry a few hand bombs with the Machine Gun Platoon; so that, for instance, when the gunners are occupying a house they can maintain the guns in action even if the enemy has crept into dead ground from the gun and under the walls of the house, escarpment, or other commanding position, where a gun can be advantageously sited when only confronted with enemy rifle fire.

Although I do not consider the terrain of the Indian Frontier favourable for the best results from machine gun fire or for machine gun movement; yet, as the machine gun is essentially at its best as a defensive weapon, unless mounted in an armoured car or tank, and constant withdrawals and periods of defensive action are a feature of Trans-Border Warfare, the machine gun should justify its employment there as much as in more favourable terrain, under conditions of European Warfare.

THE CAMPAIGN IN THE CAMEROONS, 1914–1916.

By MAJOR-GENERAL SIR CHARLES DOBELL, K.C.B., C.M.G., D.S.O.

On Wednesday, 4th October, 1922.

ADMIRAL OF THE FLEET SIR H. B. JACKSON, G.C.B., K.C.V.O., F.R.S., in the Chair.

THE CHAIRMAN: In introducing our lecturer, Major-General Sir Charles Dobell, to you, I think I may surmise that he himself, and his reputation, are better known to you than what he is going to describe to you this afternoon—that is, the Cameroons Campaign. It was one of the minor campaigns at the beginning of the War, one of many, their object being mainly to help the Navy—that is, by getting rid of the German wireless stations, about which I will speak a little more at the end of the proceedings. That was the main object of these minor operations at the beginning of the War, viz., to destroy the German wireless stations, which were links of communication between Berlin and the German Naval and Mercantile forces at sea. All those campaigns were successful. The Cameroons was one of the first. I sometimes think that the reason so little is known about the Cameroons campaign is because it was successful and that it was overshadowed by the great events on the Western front, and also there was no "regrettable incident" to cause the public to demand any enquiries. It went smoothly and well, with ups and downs, and ended successfully in less than three years from its commencement. I will now ask Sir Charles Dobell to give us his lecture.

LECTURE.

IN the time at our disposal this afternoon it is not possible to do more than trace, very generally, the conduct of the operations in the German Cameroons, which lasted from August, 1914, to April, 1916, and in which three distinct Allied forces, quite independent of one another, and operating from bases many hundreds of miles apart, were employed.

Many points of interest to both Services, Naval and Military, will, therefore, have to be overlooked or slurred over.

Of all the expeditions and campaigns which were conducted in different parts of the world during the period of the Great War, probably less is known of the operations in West Africa than those which took place in other theatres. This is largely due to the fact that there were comparatively small forces engaged, and that only native troops, British, French and Belgian, were employed, and consequently few Europeans had any personal interest in the operations.

This very ignorance encourages me to hope that my remarks to-day may be of interest.

Immediately after the outbreak of war in August, 1914, a committee was assembled in London, under the presidency of Admiral of the Fleet Sir Henry Jackson, who has shown his continued interest in the Cameroon expedition by taking the Chair here this afternoon, to consider the advisability or necessity of sending expeditions against the German colonies in Africa and elsewhere.

The deciding factors in the recommendations of the committee were whether the particular colony had a wireless station, and whether it possessed a harbour.

In Africa, Germany had four colonies: German East Africa, German South-West Africa, and the Cameroons, each of nearly one-third million square miles in extent, each with a powerful wireless station, and each with a harbour.

The fourth, Togoland, was considerably smaller, had no harbour; but a very fine wireless station, at Atakpane, near Kamina, had recently been completed.

As regards German East and German South-West Africa the recommendation was that India should be asked to send an expedition against the former, and that General Botha's Government be invited to deal with the latter.

The situation with regard to the Cameroons was somewhat different to the others, in so much as France had a very special interest in it.

As a result of the Agadir affair France had, in 1911, ceded a very large portion—over 100,000 square miles—of her Middle Congo territory to Germany. This large tract had been added to the Cameroons, and this France was naturally anxious to regain. A deputation came from Paris in August while the subject of an expedition was under consideration with a proposal that an Allied expedition should be sent.

It was consequently agreed that the French and ourselves should send such an expedition, with the primary object of occupying the harbour at the mouth of the Cameroon River, and destroying or capturing the wireless station at Duala.

The German military resources in the country were estimated to be some 4,500 native troops, with three batteries of artillery and three machine guns per company, and about 1,500 armed constabulary. As it was estimated that only a portion of this force could be concentrated for the defence of Duala, and the Allied operations would be assisted by the active support of the navies, it was decided that the expeditionary force should have a strength of 4,000 rifles and some artillery, that Great Britain and France should find half this force each, and that the Commander should be found by us. French representatives in London agreed to all these points.

Since the expedition was to be controlled from the Colonial Office, the British troops were entirely drawn from forces in the British West African colonies, maintained solely under the Colonial Office and known as the West African Frontier Force. To convey an idea of what the

resources of these troops were, I will give the establishment of the forces of the various colonies.

In Gambia, the oldest British possession in West Africa, there was one company, having an establishment of 145, with a machine gun. In Sierra Leone there was a battalion of six companies, and six machine guns—600 all ranks. In the Gold Coast there was a regiment consisting of a battery of Artillery, and eight companies of Infantry, about 1,200, with six guns and eight machine guns. In Nigeria there was a regiment consisting of two batteries of Artillery, four battalions of Infantry, and one battalion of Mounted Infantry, about 5,000 strong. The primary duty of these forces was to keep order within their own frontiers, and so only a portion could be withdrawn; further, it was not clear what effect the war would have on the native minds; again, Nigeria and the Gold Coast had frontiers contiguous with German possessions, making it impossible to withdraw troops from these areas. So you will see that the British quota of the expeditionary force had very small reserves behind it.

In Togoland matters had moved more quickly. On receipt of the news that war with Germany had been declared, the Officer Commanding the Gold Coast Regiment at once demanded the surrender of Togoland. The Governor surrendered, to Captain Bryant's ultimatum, Togoland to a distance of about 60 miles from the sea. The wireless station was situated at Atakpane, 100 miles inland, and consequently was not given up. Bryant occupied Lome at once, and set to work with the forces at his disposal to organise an expedition to attack the Germans covering Atakpane. He also applied to the French in Dahomey to co-operate with him. A few days were spent by him in organising, but on the 23rd August, only 19 days after the declaration of war, he attacked a strong, entrenched position held by the Germans on the Schra River, about 70 miles inland. This was the first occasion on which our African native troops had been called on to fight against troops led by Europeans armed with modern weapons and in possession of machine guns. Owing largely to Bryant's high qualities and personality, the action was entirely successful, and on the 27th August, Togoland surrendered, the Germans before doing so destroying the wireless installation. The value of this prompt action was very great. The Allies scored the first victory, the Germans lost an important link in their wireless communication, and French and British troops were rendered available for operations elsewhere.

The Headquarters of the expeditionary force destined for the Cameroons left England on the 31st August in the ship "Appam," which was subsequently to become somewhat notorious, owing to its capture by the German raider "Moewe," with the Governor of Sierre Leone, the Lieutenant-Governor of Southern Nigeria, and the Chief Commissioner of Ashantee on board, all of whom were taken to America.

At Freetown, the French portion of the expeditionary force was waiting for the arrival of the "Appam," and a conference with the

French commander was held. The French troops had come from Dakar. They were conveyed in five troopers, escorted by the French cruiser "Bruix." The French commander, Colonel Meyer, was a fine type of French colonial soldier; the value of his services throughout the expedition, from first to last, cannot be overestimated. After the conference, the French troops, under their own escort, moved down the coast to Lagos, where the British concentration was taking place.

The early operations in the Cameroons were not entirely successful to the Allies. The French, from Fort Lamy in the north, attacked Kusseri, a German post on the opposite side of the Chari River, but failed in their first attempt.

A second attack, undertaken in the middle of September, was, however, successful.

A British attack to seize Garua, an important German station on the Benue River, by a *coup de main*, also failed, while a British force which had occupied Nssanakang on the Cross River, and just inside German territory, was strongly counter-attacked and forced to fall back, losing very heavily. It was obvious that Nigeria could no longer furnish the quota of troops originally asked of her for the expeditionary force.

At Freetown, which is an Imperial coaling station, the War Office maintains some African troops. Authority was given for one battery and one battalion of six companies, the latter from the W.A. Regiment, to join the expedition, replacing Nigerian troops.

A word now about the action of the Navy. H.M.S. "Cumberland," under the command of Captain (now Rear-Admiral) Fuller, accompanied by the gunboat "Dwarf," and certain vessels of the Nigerian marine, arrived off the Cameroon coast on the 31st August. Captain Fuller found the Fairway buoy, which was situated 11 miles outside the entrance of the Cameroon River, and all steering marks, had been removed. He, therefore, had to survey the channel and replace buoys, and on entering the harbour found that the Germans had formed a barrier, some eight miles below Duala, by sinking eleven sea-going ships, to prevent our ascending the river to Duala, which is fifteen miles up the Cameroon River. Captain Fuller set to work to force a passage through this barrier, to reconnoitre the various creeks, and generally make himself active in acquiring as much useful information about the country as possible, and so prepare the way for the expedition.

The Germans had two armed craft which repeatedly attacked the small British reconnoitring vessels, one the "Hertzogin Elisabeth" and the other the "Nachtigal." About the barrier there was a mine-field which made the naval operations the more difficult. By the 22nd September, however, a passage had been made, giving about 19 feet of water at high tide, over the barrier. On the 23rd September the British portion of the expeditionary force, under the escort of H.M.S. "Challenger," arrived at the mouth of the river. These troops were transported in ten vessels, which were, with few exceptions, of the coasting type, possessing no condensing plants, having no cabin accommodation for officers, and

no conveniences such as we understand as necessary in troopers. It was, therefore, obligatory to get the troops on shore as early as possible, more especially since, in addition to their other shortcomings, the troopers were all overcrowded.

On the 24th, the day after the expedition arrived, a naval and military reconnaissance was carried out up the Dibamba creek, to find out if it were possible to land a force, with the object of working on to the railway, which runs east from Duala, and so to operate against Duala itself. The whole of the country about Duala is intersected by creeks, and consists of mangrove swamps—Duala itself is on an outcrop of sand; this rendered landing, and in fact all military operations, most difficult.

As a result of the reconnaissance, it was considered that a landing could be effected with some prospect of reaching the railway, and it was decided to make the attempt on the 26th. On the 25th the French troops arrived, and H.M.S. " Challenger," which normally drew about 22 feet of water, was lightened by taking out guns, ammunition, and coal, until she drew 19 feet 7 inches, or 7 inches more than there was water over the barrier at high tide. On the afternoon of the 25th, " Challenger," preceded by mine sweepers, forced the passage of the wrecks, and an ultimatum was sent to the Governor demanding the surrender of the colony. On the 26th, the ultimatum having been refused, a strong expedition was sent up the Dibamba creek, while " Challenger " shelled Duala from her position above the barrier.

The presence of this force east of Duala, in conjunction with the shelling of Duala by H.M.S. " Challenger," produced the result hoped for.

Early on the morning of the 27th, Duala and Bonaberi surrendered. Duala was found to be a thoroughly well-found and convenient place for a base. There was an excellent water supply, ice factory, good houses, good hospital, and there were in the harbour nine ocean-going steamers of the Woermann line, six smaller steamers, thirty small steam and motor boats, and forty to fifty lighters, besides a floating dock, a well-stocked naval store, and several large stores of provisions. The last named were most welcome as there were only thirty days' supplies for the troops after landing.

The Allied expedition immediately began its disembarkation The strength on disembarking was :—

	Officers.	Other ranks.	Africans.
French	54	354	1,859
British	154	82	2,451
Total	208	436	4,310

The French were organised into one battery and two strong battalions, while the British had two batteries and four weak battalions.

The expedition, drawn as it was from four British colonies and a French colony, had no administrative or departmental services whatever. It was necessary, therefore, immediately on landing, to improvise these.

The R.E. Services were organised under Captain Giles, R.E., who assumed duty as C.R.E. and D. of W., his British *personnel* being entirely composed of R.E. survey parties which had been at work in the various colonies, and of civilians from the Railway and Public Works departments, lent by the Governors of the colonies.

The Medical department was taken in hand by Colonel Statham, R.A.M.C., who had joined the expedition at Sierre Leone, and who, as D.M.S., formed the Medical Services from the Medical officers, who belonged to the Colonial Medical Service, dressers and orderlies who had accompanied the troops from the colonies.

The Transport and Supply Services were under Captain Waldback, late The Royal Irish, who had fought with his regiment as a corporal at Tel-el-Kebir as Director of Supply and Transport. Under him were an excellent band of officers, chiefly drawn from the Political department of the West African colonies, and who had come in charge of transport carriers. The supply arrangements were most arduous, as the country provided no supplies whatever.

The Ordnance Department was in charge of Major Meyer-Griffith as C.O.O. He was a Major in the Militia battalion of the Loyal North Lancashire Regiment, and was serving as A.D.C. to the Governor of Sierra Leone. He had no previous experience of ordnance work, but there was never a hitch in his department, and he eventually fell fighting while gallantly trying to save a convoy when acting as I.G.C., for which duty he was temporarily detached, owing to there being no other officer to spare.

The Pay Department was undertaken by a civilian financial officer—Capt. Sheppard.

I have gone into this matter of lack of organisation in some detail because it is not easy to realise an expedition landing in an enemy country so completely devoid of such essentials.

Captain Fuller, R.N., set to work to develop the naval resources. He armed many captured light craft, and light draft vessels of the Nigerian Marine Department, so fitting them to take part in the many expeditions in which the troops and the Navy worked together. Captain Fuller, although the British S.N.O., was not always senior naval officer of the Allied navies. He, however, worked so completely in accord with the French senior naval officer that there appeared to be no break in the continuity of the naval service.

With the surrender of Duala, the destruction of the wireless station, and occupation of the harbour, the primary object of the expedition had been attained. It was clearly impossible to do otherwise than set about the conquest of the whole colony.

In falling back the Germans had blown up a span of railway bridge over the Dibamba creek, and were holding the left bank of the stream.

The first move from Duala was to make good this further bank in order to allow work of reconstruction on the bridge to be begun.

This was done on the 6th October by the French, with the assistance of naval gun detachments on land and armed craft in the creek. The French displayed the greatest gallantry in this action, in which severe fighting took place.

At the same time, a British force, under Colonel Haywood, began a systematic advance up the northern railway. His progress was disputed at every step, but he eventually, after some weeks, established himself 30 miles up, at Susa. Between the 8th and 12th October, a British force went up the Wuri River and occupied Jabassi. This force had the support of two 6-in. guns mounted on lighters, besides many armed craft carrying lighter guns. In spite of this, owing to the advantage which is conferred by the defence in such a country, the first attempt failed; the column had to be reformed, and Jabassi was taken after the second attack.

On the 20th October, three converging columns, chiefly French, were put in motion against Edea, on the Sanaga River. The main expedition was transported to the Nyong and landed at Dehane. In crossing the bar at the mouth of the river, Captain Franconville, of the French Staff, Captain Child, Director of the Nigerian Marine, a most gallant and valuable officer, and Captain Grey, of the Nigerian Marine, were drowned, and Captain Fuller was in the water for some time and nearly lost his life. The other two columns consisted of one which moved along the line of the railway, and one conveyed in light draft vessels up the Sanaga River, under command of Captain Braithwaite, R.N. The main column was very severely engaged, and it was not until the other two began to make their presence felt that progress was possible. All three columns reached Edea almost simultaneously.

On the 12th November, again employing converging columns, Buea, on the slopes of the Cameroon mountain, was occupied. The Cameroon mountain is 13,000 feet high, and Buea stands on one of the lower spurs, at a height of 4,000 feet. This, like the Jabassi expedition, was carried out by British troops, under Colonel Gorges.

With the occupation of Buea the valuable cocoa plantations fell into our hands, with their thousands of indentured labourers, drafted from all parts of the country. It was necessary to form a department to carry on the cocoa industry and look after the labourers. This was so well done by the officer charged with the duty that the plantations showed a handsome revenue, and were eventually handed over to the Nigerian Government as a going concern. They are for sale at this moment—Messrs. Hampton have the disposal of them.

Up to this time about 1,200 Germans had come into our hands. These included prisoners of war, members of religious bodies, women and children. Owing to the prevailing conditions it was impossible to look after and supply these people in the country, and consequently all were sent to England or to British and French colonies. This evoked

very severe remonstrance and protest from Germany, but was the only policy possible under the circumstances.

The next expedition was conducted against the railhead of the Northern Railway. On the 10th December, Bare, which covers the railhead, was occupied. On the 2nd January the British expedition captured and destroyed Dschang. It was while every available man had been sent north for this enterprise that the Germans took the opportunity of attacking the French, in force, at Edea. The railway and telegraph lines were cut and the place attacked on all sides. The French, however, were equal to the occasion, and the Germans were driven off, leaving 23 Europeans and 190 African soldiers on the ground. It was impossible to maintain a force at Dschang, 50 miles from railhead. The strength of the expeditionary force was sorely tried in finding garrisons for all the points already held and in L. of C. duties, which, in a country of dense bush, were particularly arduous. The force, therefore, was withdrawn to Bare.

A word now about the physical geography and climate as we found it. The rivers of the Cameroons are only navigable for a very few miles from their mouths. In nearly every case there is a bar at the mouth, making the entrance for craft very dangerous, and within 50 miles of the mouth there are falls. Dense bush extends for about 100 miles back from the sea along the whole coast. There are practically no roads whatever in the coastal belt, the natives using canoes and travelling by water.

Running from Duala there are two good railways, one north to Nkongsamba called the Northern Railway, and the other to Eseka called the Midland—they were each about 100 miles long, and the rolling stock and engines had been removed to the respective railheads, and all bridges had been blown up. The outstanding feature of this part of the Cameroons is the Cameroon mountain, which, as I have already said, is 13,000 feet high.

The rainy season in the coastal belt lasts for 10 months in the year. Receding from the coast, the country rises, the bush gets thinner and gives place to parklike country, where there is cultivation and grass, and comparatively little rain.

After three months' hard and incessant fighting the troops of the Allied force were effectually holding Edea, 50 miles east of Duala, Jabassi, Bare, and Nkongsamba, about 100 miles from Duala, and the country to the west of the N. railway was clear of the enemy. Campo, Kribi, and the mouth of the Ngong River were occupied by small forces, supported by the Navy.

Nigerian troops under Brigadier General F. C. Cunliffe were watching Mora and Garua in the north, and Ossidinge on the Cross River was occupied by a Nigerian force.

A French force under General Aymerich, commanding French troops in Equatorial Africa, had, on the outbreak of war, taken the offensive from south and east. At first progress had been rapid, but transport and other difficulties had later made themselves felt. General Aymerich's exact position at the end of 1914 I am not able to give.

In order to prosecute the campaign with vigour, reinforcements were essential. The Governors of the British West African Colonies, and the Governor-General of French West Africa, were asked to do what they could in this respect. An armed constabulary was enlisted and trained at Duala, which eventually took over garrison duties, and some posts on the L. of C. A training establishment was also opened, where recruits, enlisted in Nigeria, were trained. Eight weeks' training was all that time would allow to be given.

During January, February and March there was constant fighting about Bare. Lieutenant-Colonel Cockburn carried out a brilliant night operation at Mbureku on the Manenguba Mountain on 3rd February, in which he captured an enemy camp, with a large quantity of S.A.A. and equipment.

In April a blockade of the coast was declared. This threw a great deal of work on to the Navy, but it was maintained effectively till the end of the campaign.

In March, 1915, Mons. Fourneau, Governor of the French Middle Congo, who had himself been wounded in the fighting in 1914, came on a deputation to Duala, to obtain the co-operation of troops of the Allied force, with General Aymerich, in a combined expedition against Jaunde.

The German Governor, Herr Ebermaier, accompanied by Colonel Zimmermann, commanding the troops, had, on evacuating Duala, moved his seat of Government to Jaunde. General Aymerich was prepared to move on Jaunde from the east, and asked that the expeditionary force should co-operate from the west.

The expedition started on the 7th April under command of Colonel Meyer, Colonel Haywood being in command of the British portion of the force. Severe fighting was encountered from the start and slow progress was made. The line Eseku–Wum Biagas was made good by the 10th May.

From that juncture the two columns joined and advanced by one route. This was unfortunate, though unavoidable—the strength of the troops available being insufficient to form two columns. Very scanty news was received from General Aymerich, and what there was indicated that his progress was as slow as ours. On 10th June, after receipt of a further communication from Governor-General Merlin, French Equatorial Africa, regarding General Aymerich's lack of progress, and in view of the severity of the rainy season, which had brought on a serious outbreak of dysentery, it was decided that it was impossible longer to maintain the force in the field, and on that day a withdrawal was ordered to the line Ngwe, Kele River. This was successfully carried out, but not without very severe fighting.

In April the control of the expedition was transferred from the Colonial Office to the War Office.

Turning now to the Northern area, General Cunliffe, commanding the troops in Nigeria, moved up to Garua, to take personal charge of the operations there, and arrived in the Allied camp on the 18th April. He

then had at his disposal: British, eight companies Infantry, one company Mounted Infantry, three guns, including a naval 12-pr. sent from Duala, nine machine guns; French, three companies Infantry, one squadron, two guns and two machine guns. The operations entailed trench warfare, but after prolonged and severe fighting, Garua surrendered on the 10th June.

The situation then, at the end of June, was: General Aymerich was on the line Bertua—Dume station—Lomie—Bitam. The expeditionary force was holding the line Campo—Kribi—Dehane—Ngwe—Jabassi—Bare, and Brigadier General Cunliffe's troops were on the line Ossidinge—Takum—Gaschaka—Tingere—Ngaundere.

In August, Mons. Merlin, Governor-General French Equatorial Africa, accompanied by General Aymerich, attended a conference at Duala. It was decided to resume the most vigorous offensive from all sides the moment the weather would allow *i.e.*, about the end of September.

General Cunliffe, who could not be present as he was engaged against Mora, where a small enemy force still held out, was informed of the decision of the conference and asked to co-operate.

French and British reinforcements arrived steadily during the summer, among the latter being the 5th L.I. of the Indian Army, and two companies of the W.I.R. from Sierre Leone.

Arrangements were made for a sufficient supply of transport porters from the colonies—1,500 a month to replace casualties alone were required. A 4·5″ howitzer, Rolls-Royce armoured car, a Ford van company, and wireless sets were ordered from England. A motor road was begun from Edea and completed as far as the covering troops, which were at Ngwe.

On the 1st September the strength of the expeditionary force was :—

	European Officers.	O.R.	Native ranks
French	70	274	3,023
British	254	131	4,532
Total	324	405	7,555

The offensive was resumed by the expeditionary force on the 22nd September. The British column was directed on Jaunde, by a narrow bush track about 100 miles in length, *via* Ngwe—Wumbiagas—Ndog, while the French were to move by the line of the railway, and consequently to the south of the British. From the first most strenuous fighting took place. Every foot of the road was contested. The British were obliged to convert their track into a motor road, while the French had several important bridges to repair in order to supply themselves by rail. In front of the completed motor road and rail head 7,000 carriers were employed in bringing up supplies.

General Cunliffe had been pushing south and east, and on the 6th November he had moved his line forward to Bamenda—Banjo—Tibati; in this advance he had encountered most severe opposition. His action

on Banjo mountain he described as " one of the most arduous ever fought by native African troops." By this day, the 6th November, the expeditionary force was on the line Eseka-Wum Biagas, with a force at Deschang.

On the 23rd November the final advance on Jaunde was begun by the expeditionary force. Severe fighting was met with at first, but by the middle of December this began to slacken, and on the first of January the British force entered Jaunde, the French cutting the Jaunde-Kribi road at the same time. Many carefully prepared positions were not held by the enemy, and it was evident that they were on the run.

When Jaunde was reached it was found that the Germans had evacuated it some two days previously and were in full retreat to Spanish Muni. In anticipation of this movement, a strong Allied force had been sent to Campo, with orders to move along the Muni frontier and cut off the retreating Germans.

On the first January, the day on which Jaunde was reached, General Cunliffe's advance troops were at the Nachtigal Falls, on the Sanaga River. Within a few days of its occupation, Jaunde was reached by units of Generals Cunliffe and Aymerich's troops; among the latter were two companies of Belgian Infantry. General Aymerich himself arrived on the 5th January. The pursuit of the retreating Germans was taken up by Colonel Haywood and several French columns. The rear guard was engaged on several occasions, but the Germans managed to elude all efforts to arrest their flight, and 1,000 Europeans and 6,000 African troops reached Spanish Muni, where they laid down their arms.

The Cameroons was then entirely cleared of all Germans, except a small group who were still holding out at Mora. This gallant band, who had defied all efforts to dislodge them, had held out for 19 months on the top of a rocky hill. They were offered terms, which they accepted, and on the 18th February they surrendered.

The two companies of Belgian troops which were in General Aymerich's force came into Duala and returned to their own country by sea. They must have marched and fought over close on 1,000 miles.

The blockade was raised on the 27th February, and on the 1st April practically the whole country was handed over to a French administration under General Aymerich. The French now have a mandate for the majority of the country, the British mandate extending to a narrow strip along the Nigerian border.

This result was attained with the least possible drain on Imperial resources. The troops employed were, with few exceptions, all drawn from neighbouring colonies, and would probably not have been employed elsewhere at that period of the war.

The German captured shipping was made use of for trooping, for armed craft, for transport of cocoa and other produce to Europe, for carrying German prisoners, while two ships were sent to German South-West Africa to assist in the trooping there.

Material and supplies had to be obtained from home, but the

demands were light and the strictest economy in every particular was observed, so much so that the total cost of the British portion of the expedition was less than £2,700,000.

It is a remarkable thing that the Gold Coast Regiment was the first unit of our Army to be on German soil—with French assistance they conquered Togoland, they took a great part in the operations in the Cameroons, they went straight on without rest tc German East Africa, and were in readiness to go to Palestine when the Armistice was signed. This constitutes a very fine record for a regiment of West Africans, and one of which their Commanding Officer, Colonel Rose, of the Worcester Regiment, may well be proud.

Aircraft were not used in the Cameroons expedition. The Admiralty and War Office were approached, but both decided against providing them; this was before the days of the R.A.F.

Although wireless from ships worked most efficiently and well, the wagon and pack sets with the troops gave very bad results. It was difficult to account for this, but the dense forest appeared to affect it in some way. It was particularly unfortunate, as the air lines through the forest were frequently cut by falling trees, by elephants and by carriers cutting out pieces to tie up their loads.

The Ford van company, which came out in August, 1915, was invaluable during the advance—each car had to do over 100 miles a day, and to do this native drivers had to be trained to take their turn with the Europeans. Each Ford van was worth about 150 carriers, and at a pinch it could always do a bit more.

As regards treatment of sick and wounded, there was a base hospital at Duala for 3,000 beds, and two smaller hospitals in the French quarter for accommodation of their carriers. British soldiers and carriers had to be retained at Duala until they were cured and fit to go back to work, or until they were patched up sufficiently to go back to their villages. We had with us all available medical personnel from the W.A. colonies, and consequently the colonies could not accommodate and look after our sick and wounded.

The conduct of the African troops, French and British, was beyond praise throughout; all ranks displayed the very greatest gallantry in most exacting circumstances. The W.A.F.F. more than fulfilled what had been expected of it, from a fighting point of view, while the training and discipline reflected the greatest credit on all who belonged, and had belonged, to the force.

No day appeared to be too long, no task too difficult for them. With a natural aptitude for soldiering they are endowed with a constitution which inures them to hardship. They share with their Senegalese brothers an inexhaustable fund of good humour.

With a specially prepared ration, which was carried on certain occasions, they were able to go for six days with only what they carried on the man. Their marching powers are wonderful—a column was once

known to do 87 miles in 47 hours, in full service order, carrying 100 rounds ammunition, cape, blanket, etc.

DISCUSSION.

MAJOR-GENERAL SIR GEORGE ASTON: The lecturer asked me to come to London to-day to speak on the special subject of the lecture, and I should like first to congratulate him on the lucid way in which he has told us of what happened in the Cameroons. The question he has asked me to deal with is that of why it happened. That involves an important question, so important always in a country like ours, of the control of warlike operations in a democratic country. I recall very vividly a very hot summer's afternoon in July, 1907, in this theatre, when the lecturer introduced for the first time to the public the expression, amphibious war. In the subsequent discussion Lord Roberts took a part, a great soldier, who was sitting in the seat I have just vacated, and the great Admiral Sir A. K. Wilson, was in the Chair. The late Sir Julian Corbett, whose loss we deeply regret, was sitting behind the rails here. The discussion hinged on that very question—the great difficulty of ensuring the most efficient use of the sea and land forces in a democratic country, and the need for devising some form of Government Committee, individual or whatever it might be, to exercise that control and to decide what should happen, and when. That was in 1907. It is now eight years since war broke out, and I think that the time has come when one might, perhaps, allow the safety-valve of one's discretion to lift a little bit. In the years between 1907 and 1914 it came to my personal knowledge, as head of the General Staff of the Army in South Africa, that there was no machinery in this country for deciding upon a plan of campaign as a whole. I speak of that advisedly, because, naturally, it is the work of the General Staff to prepare plans and look ahead, and endeavour to draw up, from what they call a purely academic point of view, hypothetical plans of campaign. It was impossible to get any guidance on the subject of what a plan of campaign would be from the point of view of South Africa in the event of war with Germany. South Africa was right up against German South-west Africa, and the military and naval policy of dealing with German troops in that territory it was impossible to get any guidance about. When war broke out in 1914 we were still in that position. We had, as you know from Lord Haldane's book, drawn up a plan of campaign for using the British Expeditionary Force, and experience showed the brilliant method which the Government had arranged to mobilise and distribute that force, but there was nothing beyond that. There had been machinery, but there had not been the time for that machinery to work, or the leisure for the people concerned to work it properly. There was no Sub-Committee of the Committee of Imperial Defence that could deal with such questions as offensive operations elsewhere than in France. At that momentous time Sir Henry Jackson and I were working in the Admiralty together. A sub-committee of the Committee of Imperial Defence was extemporised and devised to report to the Prime Minister on all proposals for using milit ry forces elsewhere than in France. The composition of that Committee was as follows:—General Sir Ian Hamilton was the Chairman; but he was hard at work elsewhere, and did not attend, and Sir Henry Jackson acted as Chairman of the Committee. The Committee had upon it a representative of the War Office, Sir Charles Caldwell; a representative of the Colonial Office, the present Sir George Fiddes; a representative of the Foreign Office and of the Treasury, myself among others; and the Secretary was Captain S. Wilson, who was in the R.E. and is now Governor of a West India Island. It was an extemporised arrangement to con-

sider what the strategists would call " diversions " of forces from France. That was the body that recommended the first overseas campaigns; it was for the political side to decide to move the troops. That was done nominally by the whole Cabinet, but a small number of them got together and did the work. The first action that led to the Cameroons campaign was taken on the initiative of an officer in the Gold Coast Colony, who had a small force in that Colony. There was no harbour in Togoland; the principles on which the Committee went were to help the Navy, and they considered that the best way to do that was by attacking all the wireless stations in the world held by the Germans, and the harbours. There is a very powerful wireless station in Togoland, and one of much less importance in the Cameroons; also a Spanish one at Fernando Po which the Germans were trying to use. Although, as the Chairman has said, there was no harbour in Togoland, there was a landing-place, and if we wanted to send an expedition to the wireless station a hundred miles inland it was important to have the landing-place without fighting for it. A very enterprising officer on the Gold Coast took it, acting, as far as I know, on his own responsibility. He went across with a very small force and took it. The story I want to tell you—if the press will let me be a little indiscreet on the subject—is that the Colonial Office, in whose service he was, was very angry. I do not know what the Colonial Office do to people like that, but the War Office was very pleased, and promoted him before the Colonial Office got in to do anything. That was the beginning. Attention was then devoted to Duala. I should like to add one other thing to what the Chairman has said. I will use the word objective—a most hateful word—but there was another objective that I should like to add to those mentioned by the lecturer, and that is—any war-vessels of the enemy which might be in a harbour which we could get at by a small military force. I think that there was a small German gunboat in the harbour at Duala. There was also some merchant shipping, shipping of enormous importance to Germany and ourselves, which was taken. To the best of my memory, the Cameroons campaign was not undertaken on the initiative of the Committee, but on the initiative of the French, who were very anxious to undertake their capture by a combined expedition. Another little personal touch that I might mention was the question whether Sir Charles Dobell should command the expedition or not. He was the senior officer, French or British, on that coast. The French gracefully conceded that he should command, but there was a proviso, of course, that the nationality of whoever took these places should not prejudice the peace-terms after the war; in fact, that applied to all the overseas possessions of Germany and Turkey. That is the story of why this campaign happened; how the initiative came about. I remember attending that meeting with French officers—I do not think that there was a French soldier present, but only naval officers. I remember asking one question, which was: " If you conduct operations inland, what form of transport would you use ? " And the reply was: " It is quite easy, we will use mules." I rather doubted it at the time, and I should like to know whether the country was suitable for mules, with all the difficulties of forage, and so on. I have made those small disclosures in the interests of historians, and in answer to anti-British propagandists, who maintain that we conducted these overseas expeditions with the object of territorial expansion. There was only one object in view, to the best of my knowledge, up to the end of August, 1914, when I went abroad, and that object was to win the war by defeating the German army, diverting the minimum military force from that purpose. I new nothing of what happened to the Committee afterwards, or whether it ecommended the Dardanelles expedition, or other expeditions. The question of combined control in an amphibious war is one of immediate interest at the present

moment, and might have been of much more interest if things had become worse in the Straits last week. I think that it is of value, from an historical point of view, to put this information before the public as to how things were actually done in 1914. I am sure that the object of anybody who had anything to do with our strategy at the beginning of the War was to try to win the war in the only way in which the war could be won, by defeat of the principal enemy's principal army, and by using the Navy to promote that object.

THE CHAIRMAN: There is an officer here who actually took part in the expedition under General Dobell, and I hope he will continue the discussion.

COLONEL AUSTIN HAYWOOD: There are two points which struck me very forcibly about the lecture as being one of the officers who had the honour of serving under the lecturer in the Cameroons. As one of the officers who was merely a regimental officer, and not on the staff, I had not appreciated what this lecture has brought home to me very clearly. One thing was the extraordinary difficulty that Sir Charles Dobell and his staff must have had in organising the expedition. It seems to be, perhaps, an obvious thing to say that it was difficult to organise, but I think a great many of us did not appreciate the difficulty that there must have been in bringing an expedition of that sort into a tropical country, and organising all the services, as had to be done, and carrying the whole thing through to such a successful conclusion. First of all, there were the difficulties of supplies. Sir Charles Dobell only had time to touch very lightly upon that, but there was an extraordinary difficulty in the country in getting supplies. Everything had to be improvised. It was not, like on the Western front or in some of the larger campaigns of the war, where supplies were always forthcoming. Somehow or other we had to collect supplies out of the country as far as possible, in order to make up the very small quantity which was available from Europe. Another thing was the question of health. The wear and tear on the mind of the Commander and Staff of the expedition in that tropical country were very great. Then there were the difficulties of communication. As Sir Charles has explained, there were three main expeditions operating at distances of 500 to 600 miles apart through a country where there were practically no good roads, and only two short railways, each about one hundred miles long, and practically no telegraph lines and no wireless. All that must have made it extremely difficult for the Commander. I am glad that these points have been brought home to us, and I am sure that regimental officers will now appreciate the difficulties of the Commander and his Staff. One other thing which occurs to me is this. Sir Charles Dobell is very modest, and he touched very lightly on the small cost of the expedition. It is rather a remarkable thing to my mind that the campaign cost only £2,700,000, although it lasted for about eighteen or twenty months. I think that is rather marvellous. It would be interesting, if it were possible, to get a comparison with the cost of other campaigns during the war—how much per head per diem the campaign cost—I feel certain that none could have been run as economically as this one. In connection with the economical way in which the campaign was run, I think the point which Sir Charles mentioned about the cocoa plantations is rather interesting. Those cocoa plantations, I believe, were made to work and pay by Sir Charles Dobell while the campaign was going on, so that, in addition to fighting and clearing the country, he actually succeeded in getting some revenue out of it—a rather wonderful thing.

SIR CHARLES DOBELL: There are only two points that I think I have to refer to in my reply. General Sir George Aston asked about the possibility of using animal transport. Well, animal transport was out of the question. The French

brought about 200 mules, if I remember rightly, and they did a little work at first in drawing a few old railway trucks, which were put together in Duala, as far as the bridge at Japoma over the Dibamba creek. They were not worth keeping, and very soon were sent back to Dacca. There were a few ponies in Duala, but they got tsetse. It is quite an impossible country for animal transport at all. The only method is by transport-carriers or, after you have made the roads, mechanical transport.

THE CHAIRMAN: I think you will all agree with me that we have had a most interesting and instructive lecture from General Dobell and very interesting remarks from those who have taken part in the discussion. Sir George Aston has explained how this campaign was organised in the beginning, and also referred to the other campaigns for the destruction of the wireless stations. He rather made me think that the Committee he referred to included all combined naval and military operations; but it did not, it only included those in the Colonies, but none nearer home. It did not include the Dardanelles. Possibly it might have been better if it had included the Dardanelles, but it did not do so. I should, therefore, like to correct that impression.

The Army pattern of wireless which was used would give a reduced range in the damp forests. Wireless at the present moment is getting a great boom and possibly a few remarks from one who has studied it may be of interest historically in regard to the German system. It was really the want of submarine cables controlled by Germany that forced her into building these wireless stations in her Colonies. She felt that she must be able to communicate without the messages passing through other hands and she saw no chance of getting cables. The only one she had, as a matter of fact, was destroyed the day after war broke out. She had the foresight to erect wireless stations in different parts of the world. Wireless was not as reliable as the submarine cable and it was more unreliable in those days than at present. But it had the very great advantage over the submarine cable that it could communicate with ships at sea; and thus the stations in Africa, the one in Togoland, the one in the Cameroons, the one in South-west Africa and the one at Dar-es-Salaam were links of communication between the General Naval Staff in Berlin and every ship on the ocean within a certain distance from the stations. I think the distance at a pinch might be taken roughly at 2,000 miles. Longer distances were possible, but 2,000 miles would be the maximum that could be depended upon, and it might be put as a certainty at 1,500 miles—that any ship within 1,500 miles of the coast of Africa could be warned and given directions from Berlin, although she might not be able to reply. The German statistics, drawn up by the Prussian Ministry, claim that over 800,000 tons of German shipping were saved by the warning signals sent at the outbreak of war from those wireless stations, and that the African stations contributed to the greater part of that saving of the merchant ships from capture by our cruisers. They had directions to proceed to the nearest port and lay up so as to escape capture. Over three-quarters of a million tons were saved by the German wireless stations. So many stations would not be quite so necessary now because we can cover so much greater distances. The station at Togoland was by far the best, and it had only been in operation 4 months. The Germans knew perfectly well that the station at Togoland could not last long in the case of war and that they could not very well defend it. They did not expect war at the time and had not such defence as they otherwise would have had. The only reason why this best station, which Captain Bryant so promptly destroyed, was not in the Cameroons was on account of the difficulty of getting the heavy machinery, the large dynamos and

wires, etc., through the bush to a suitable place. The difficulty of transport has been already described, and the Germans knew it, and knew they could not get the apparatus into the interior of the country, where it would be free from attack. Until the wireless station was destroyed it enabled them to keep touch with Africa. If they could keep their apparatus they could receive signals from Berlin, occasionally flying their aerials by means of a kite. It was not only necessary to destroy the towers and the machinery, but it was necessary to capture all the apparatus and the *personnel*. In London, when we had this Committee and agreed that we would destroy the wireless stations, I think that everyone of us knew that that would not be all and that the capture of the harbours and the destruction of the stations would be only the beginning. That was the case in every single instance and when we once got into the country we were obliged to stay there. The same thing happens in nearly all wars: you go for a minor objective and you have to take the major one. Another point I think the General was too modest about was that he did not bring out that during the whole of that campaign the power of rewarding the men on the spot who did well was not in his hands. I happened to be able to follow that campaign nearly to its completion, and I tried to assist it in every way I could by endeavouring to squeeze things out for it, but it was a time when we were short of everything—short of cruisers, aeroplanes, seaplanes, and particularly short of guns. If that had not been the case we might have sent them more than we did, but I think with the little they had—and it was only a little they could expect—they did remarkably well. One point brought out in the lecture was the cordial co-operation between the Allies. There was not only cordial co-operation between the Army and Navy, but between the three armies and the two navies of the different nations. We always feel that there may be friction on such occasions and that the friction may begin at the bottom, but one generally looks to the top to stop it. We know now why the friction, if any, and if it did begin at the bottom, never got any further. We must thank the heads for that. It was most remarkable both in the army and the navy. The French senior captain stayed at sea rather than interfere with Captain Fuller in the river at Duala. He patrolled outside the mouth of the river to protect his junior officer inside, instead of *vice versa* as is generally done, and I think we should remember that. Of course, we were obliged to hold the harbour at Duala and it was really a matter of importance to have captured it. If the Germans had ever got command of the sea, or had a force in Duala, they would have made the route to the Cape very uncomfortable indeed. The harbour is an extremely good naval base and its situation in the Bight has a small resemblance to the German Bight: it is the same shape and the same principles apply on a smaller scale. The Germans had plans ready for fortifying it and making it a very strong naval base indeed, but they did not have the time to start the work.

I will conclude my remarks by asking you to give a vote of thanks to Sir Charles Dobell for his very interesting lecture this afternoon.

The motion was carried unanimously.

MAJOR-GENERAL SIR W. H. ANDERSON: I wish to propose a vote of thanks to Admiral of the Fleet Sir Henry Jackson for presiding this afternoon. We have heard a few remarks as to the difficulty of making plans between the two Services, but you have only to look straight in front of you to see that these difficulties can be overcome. You see Sir Charles Dobell lecturing to you and you see in the Chair an Admiral of the Fleet. He has made some remarks to us with regard to the wireless stations and harbours which were the main objects of the expedition, and

our thanks are due to Admiral of the Fleet Sir Henry Jackson for having presided and for giving us his expert views this afternoon.

The motion was carried with acclamation.

THE CHAIRMAN: I thank you, Ladies and Gentlemen.

The following note is added by Lieut.-Colonel R. H. Rowe, D.S.O., M.C., R.A., who was Major-General Sir Charles Dobell's Staff Officer during the campaign :—

As General Dobell told me that he wished I had spoken at his lecture, I forward the following notes. In view of the peculiar nature of the administrative side of the campaign they may be found of interest. I embarked with him on the S.S. "Appam" in August, 1914, and was his chief Administrative Staff Officer from that date until the conclusion of the operations.

The forces engaged were collected from the ports in the various Colonies as we proceeded down the coast towards Duala. The Colonies provided *personnel* and *matériel* according to their resources, and their ideas of what could be spared, and what we thought we should want. There was, when we started, no administrative organisation, and no corps or departments existed. One regular R.A.M.C. officer came off at Sierra and no others. There were no A.S.C. officers at all available till late in the campaign, nor did any departmental officers, such as ordnance, veterinary, etc., appear.

At one port a civilian doctor would come off with some medical stores, at the next the medical officer would arrive in charge of some barbed wire, at another came off a tin-miner or district commissioner, hoping "to be of some use." At one time things were further complicated by officers arriving to join armed with certificates as follows :—

"The bearer *So-and-so* is hereby appointed chief medical officer to the expedition.

(Signed)

Governor and Commander-in-Chief."

So-and-so was naturally rather disappointed to find the D.M.S. already in existence.

By the time we arrived off Duala we were a fleet of some sixteen vessels of various capacities and speeds, all very full of troops and stores and a very large number of persons expected to be of use, such as civilian doctors, political officers, local post office officials, railwaymen, mining prospectors, merchants and others. Communication between the ships was chiefly maintained by visual signalling between native signallers of quite different tribes.

Some of the native soldiers from the interior, who had never seen the sea in their lives before, were very sick. "States" were made out and rough lists of the stores in each ship compiled. Heads of the various departmental services were appointed and the various persons present in the ships were posted to the services and departments according to our, and their, ideas of what duties they could manage to perform.

It has been said that the administration of the campaign was good and that it was "well run." I think this was undoubtedly due to the fact that, while there were few officers of military experience on the administrative side, and practically none with any special knowledge, from a military point of view, of their work at the beginning, they all knew the country, and the difficulties they were likely to meet, and were formed into an extemporised but quite sound organisation with

clear instructions, from the outset. They embarked on their work with unbounded enthusiasm and energy.

On the capitulation of Duala after the naval bombardment, the *personnel* and stores were discharged on shore and rapidly quartered and sorted out.

Two native clerks, who had formerly served with me in Nigeria, hearing I was off Lagos proceeding "to the war," put off to the ship with typewriters, cyclostyles and other clerical fittings, and joined up. These two native clerks and I formed the entire general headquarters administrative staff of the campaign till towards the latter part, when a staff captain was added.

The Royal Engineers consisted of a few sappers who were surveyors in Nigeria and the Gold Coast, and civilians from the P.W.D. and railways and telegraphs. They ran a train a day in each direction over the hundred miles of the Northern railway without a hitch, throughout the campaign, after rebuilding the bridge that had been destroyed. The "Supply and Transport" department, organised from among political officers and civilians of various classes, very soon became an efficient Army Service Corps and Carrier Corps, and their good work is well remembered, especially by such troops as had very different experiences later, on other fronts.

It is, I think, noteworthy, that this extemporised organisation, instead of being extravagant, did things well and cheaply, the whole campaign of 22 months costing well under £3,000,000.

The chief difficulty met with was the carrier capacity on long lines of communication. A "carrier" or "porter" carries a load of about 60 lbs. or 20 to 25 rations. Long lines were divided into stages of a few days' march each. The country operated in was stripped bare and practically all food had to be brought up. Thus the carriers on the first stage had not only to bring up the rations for the troops at the front, but enough for themselves and also for the carriers employed on the further stages beyond. A few simple sums in arithmetic will soon show that, as the line of communications increases, the number of carriers required very soon grows to an impossible figure, out of all proportion to the troops engaged or the resources in men available.

This led General Dobell to commence the building of motor roads, sufficient to carry light Ford lorries, pushing the carrier services further and further forward, and supplying the first few sections entirely by mechanical transport. This took time; otherwise, had the roads already existed, General Dobell would undoubtedly have finished his campaign still more quickly.

The campaign was originally run by the Colonial Office under Colonial regulations as regards finances, and stores were supplied by the Crown Agents for the Colonies and the various adjacent governments. There were present in the forces engaged a great variety of unusual elements, such as carriers, rations peculiar to the various tribes, equipment different to the War Office issues, etc. This necessitated a departure from the procedure contained in any available regulations, and local regulations, and instructions were necessary. Financial instructions, stores regulations, standing orders, etc., were compiled at once or as early as they could be drafted and printed, and issued to the services and departments. The original regulations issued were produced with care and were of the simplest possible nature, the result being that changes in method and organisation were few, and the same few simple regulations held good throughout the campaign, with red-tape reduced to a minimum.

The care of the sick and wounded, their evacuation by hammock, lorry and train, and their treatment in base hospitals, received the greatest attention that could

be given, and the system worked with the greatest smoothness throughout the operations.

Mule transport was used, but to a very limited extent, motor or head transport being found more suitable.

Undoubtedly such extemporised services could not have worked with the efficiency they so rapidly acquired had it not been for the extraordinary quality of the regimental officers. For most of the campaign they were chiefly regulars of considerable service. Officers commanding companies in the Cameroons were of the type and capacity to have been, in France, promoted to command battalions and brigades. They were supplemented and assisted by men selected from among the political and other services, who made up for any lack of military training by a very complete knowledge of the natives and West Africa.

With such officers, commanding native troops that are second to none in the world for their mobility and endurance, our extemporised administration " worked."

It should be added that, in addition to the administration of the campaign itself, the headquarters administrative staff also dealt with General Dobell's work in governing the occupied territory and administering the civil government. Customs were collected, police forces recruited and organised, commercial activities resumed, and the " plantations " put into running order. The civil administration was nearly self-supporting out of customs revenue and other resources by the time General Dobell ceased to be Commander-in-Chief and " Governor " of the occupied territories.

THE TERRITORIALS (INFANTRY) IN INDIA, 1914—1920.

By MAJOR-GENERAL NIGEL WOODYATT, C.B., C.I.E.

On Wednesday, 11th October, 1922, at 3 p.m.

LIEUT.-GENERAL SIR E. C. BETHUNE, K.C.B., C.V.O., in the Chair.

THE CHAIRMAN: It is my privilege to introduce to you this afternoon, Major-General Nigel Woodyatt, who is to give a lecture on a subject which is of great interest to all of us, namely, the work of the Territorial Forces as it appeared to an expert who was in India at the time. The last I saw of the Territorials in 1914 was when, as Director-General of the Territorial Forces, I saw them off at Southampton and they disappeared into the night; and I am sure we shall listen with much interest to what the lecturer has to say on the subject of how they kept up the name and traditions of the Territorial Force in India. I am presiding over a lecture which is going to deal with work that was done, and jolly well done, in India by the rather despised Territorial Forces. With those few words I introduce to you Major-General Nigel Woodyatt, and ask him to deliver his lecture.

LECTURE.

WHEN I was invited—and accepted the invitation—to lecture on the subject of the transfer of some 55,000 Territorial Infantry to India, during the Great War, I little thought I should find myself up against so difficult a task.

In the first place, unless one is a Territorial officer—which I am not—it is almost impossible to understand the venture properly, or to know as much about the "ins and outs" of the matter as one would like to. Secondly, my text is taken from a chapter written on this subject in a book called "Under Ten Viceroys." This alone is a serious handicap, because of the desire to avoid too much repetition. Yet I feel that in reality what was condensed in that chapter is nearly all that I am justified, by my knowledge, in saying about the Territorials. Lastly, I was not in England when they embarked, and therefore have to rely on hearsay for many points.

On the other hand I hold some advantages. I have much sympathy with this body of men in their trials, their sacrifices and their disappointments. This helps me to feel for them. Again, I have a great admiration for the splendid work they did in India, of which I saw so much, and

regarding the merits of which I hope to convince you. Finally, I am longing to give some kind of tribute to the Territorials for their patriotism, self-sacrifice and devotion to duty.

I do not propose to give you a lot of statistics; they are often confusing, and I am hoping instead that our Chairman to-day will enlighten us as regards the names of the various divisions, and where they went to in India, such as the " Wessex " to the Punjab, etc.

My first acquaintance with Territorials was when I was home on leave from India in 1909, and I mention it only because of an interesting allusion to the late Lord Kitchener. The Territorial movement was then in its infancy, and steps were being taken in all counties to boom it hard. At one of the principal towns in Cheshire the local Mayor convened a big meeting in the Town Hall to be preceded by a banquet. I was invited to dine, and respond to the toast of the Army and Navy.

The whole affair was rather peculiar. At the end of the large hall was a stage; on this raised platform some forty of us dined in uniform and evening dress, while territorials, would-be territorials, their wives and sweethearts, together with hundreds of townsfolk, filed in and took their seats. After dinner the Mayor proposed the usual toasts, and when responding for the Services I began with regrets regarding my colossal ignorance of the Navy, and continued with a eulogy of Lord Haldane as War Secretary, giving some details of his wonderful scheme for a citizen army. The facts about the expansible framework of his plan, evolved with so much foresight, seemed to interest my audience, and I passed on to some comments on voluntary soldiering just made at Calcutta by the Commander-in-Chief in India. No sooner were the words " Lord Kitchener " out of my mouth than the hall, which was now crammed, burst into cheers, which lasted for several minutes.

This took me greatly aback, as I had no idea our Chief in the year 1909 had such a hold on the British public. He had been nearly seven years in India, and I thought he had been forgotten. Waiting for the applause to subside I continued my harangue, saying I was delighted to hear so much cheering, because Lord Kitchener—here I had to stop again, for as the audience warmed up the cheering was more deafening than ever. And this was a little country town! I wanted to tell them that Lord Kitchener was Colonel of my regiment, but had to desist.

As regards Lord Haldane, I would like to take this opportunity of correcting an unfortunate mistake I made in my book " Under Ten Viceroys," when I said that he resigned his seat in the Cabinet on the declaration of war. How I managed to make such an egregious error can only be accounted for by the fact that I was bundled out to India within forty-eight hours of that declaration, and in the interim, and later, all the news we got was somewhat confused. The strange thing is that I never realised my mistake until an utter stranger very kindly pointed it out to me by letter—too late, however, for a correction to appear in the second edition of that book.

Although somewhat foreign to the subject of my lecture, I should

like to say that when you consider all Lord Haldane did for the Army, it strikes one that, as a nation, we are most ungrateful. There are many here who know much more about this matter than I do, and there may be some who were behind the scenes at the time. The " utter stranger " I have mentioned has confirmed me in my belief that Lord Haldane proved himself the best War Minister we have had since Cardwell's day; that he not only warned the Government that the war was coming, but also did all he possibly could to prepare for it.

When he was sent to Germany in 1912 his task was no easy one in face of the two existing parties there, one for peace and the other for war, with the latter growing stronger every day, and rapidly gaining recruits—amongst them, in the end, the Kaiser. But all this is given clearly in H. Begbie's " Vindication of Great Britain."

I have said that the subject is somewhat foreign to my lecture; but is it, when the *father of the Territorials* himself is so cruelly used and abused? Even Mr. Asquith—who was behind him in all he did—has only once protested in the House of Commons at the slanders against Lord Haldane. Somehow, when one gets the chance, it is difficult to refrain from giving some kind of tribute to this great statesman.

I know well that many distinguished soldiers, and others, feel as I do in this matter, and regard Lord Haldane as the saviour of his country. I need only mention four great achievements he accomplished during his tenure as War Secretary to prove that he was really the man who saved England :—

(1) The evolution and development of the Imperial General Staff.
(2) The creation of the Aldershot fighting force.
(3) The production of his Territorial scheme.
(4) The formation of the Officers' Training Corps.

My next experience of Territorials was in the summer of 1914, when I was again at home on leave, this time from my appointment as G.S.O. 1st Lucknow Division. As we had a large number of voluntary soldiers under my General's command, it seemed advisable to pick up all the hints possible regarding the training of the civilian army in England. Applying personally to the Horse Guards I was recommended to go to Maidstone Nothing could have exceeded the kindness of the Kent Territorial Association. The Secretary collected all the Adjutants (Cavalry, Artillery and Infantry) at a conference, when the whole system of training was fully explained to me. I was amazed at the progress made in about six years, and at the good theoretical knowledge the officers must evidently possess, to be able to tackle the schemes and problems laid before me. I remember being especially struck with the week-end tours, during which tactical exercises without troops were carried out, often by means of the slow Sunday trains. The Volunteer Officers in our division derived much benefit from the notes I took back with me to Lucknow.

As you can well imagine, I had little idea in June, 1914, that within a few months we should be welcoming whole territorial units into India

itself, or that hundreds of officers who had never expected in their lives to see the East would suddenly find themselves required to undergo four or five years' soldiering in various parts of Asia.

I was in Calcutta when an advance party of the unit for that garrison arrived there, and sent down a staff officer to help them. He reported to me that the two officers with the party were very cheery, and that they had brought most of the heavy baggage with them. The assortment of fishing rods and gun-cases he told me reminded him of Euston Station in early August! Army headquarters having foreseen the trouble that new arrivals fresh to the country were bound to undergo, ordered a conducting party from one of the eight regular Infantry Battalions left behind in India to meet each battalion at the port of disembarkation. These parties undoubtedly gave much assistance, but the fact that nearly all regular senior officers and N.C.O.s had been drafted already to units overseas as instructors, prevented the Territorials in many cases from getting the help of really experienced men.

Although, as I have said, I do not propose to bore you with figures, it may be well to mention that the total of some fifty to sixty thousand Territorial troops sent to India consisted of thirty-nine field batteries and forty-five[1] infantry battalions. There has been dissatisfaction and a good deal of discussion about certain promises said to have been made to the earlier arrivals regarding their ultimate disposal. The Territorials were, of course, sent to India for garrison duty in place of the regular batteries and battalions released for service overseas. They were sent because they were the only troops available. It is quite certain that many batteries and battalions arrived with the conviction that it was only a temporary duty, and mainly necessary in order that they might complete their training; that is to say, that in a year or less they would be transferred to the Western Front, with their place in India taken by units of the New Army.

Be that as it may, I soon became aware of a very strong feeling of dissatisfaction on this subject. By March, 1916, it was clear that the exigencies of the Service and the aggravated submarine menace made it quite impossible to fulfil any promises of return that might have been made. The officers were very sore about it, but I have always thought it speaks so well for the Force that this soreness never affected their keenness or their work, and that eventually all ranks accepted the inevitable with splendid spirit.

It may be as well to say now that where in my remarks on the exploits of the Territorial Force in India I refer to certain units or certain individuals, I want you to take these remarks as typical of the achievements, conduct and soldierly qualities of these troops *as a whole.* My connection with Territorials (some portion or other) remained unbroken from 1914 to 1920. During this period I had no less than three batteries

[1] 36 battalions before January, 1915; 1 battalion during 1915; 8 battalions in January, 1916.

of artillery and ten battalions of infantry under my command at one time or another. As Inspector of Infantry in 1917–18 I visited some fourteen battalions more; as a Commander I had many staff officers of various grades who were Territorials, and while G.O.C. Abbotabad I met hundreds of Territorial Officers deputed there for the Mountain Warfare School.

One disciplinary case that came before me in 1914, when D.A.G. Army Headquarters at Simla, I may mention here as illustrative of the strong sense of duty which inspired the young Territorial soldier from the very first: a detachment of the Dorsets were guarding interned "enemy subjects" in a camp surrounded by barbed wire, not far from Poona. A German *détenu*, one moonlight night, began playing with the barbed wire, contrary to orders. He was warned by the sentry to desist. As he appeared to comply the soldier continued his beat; but as he reached its furthermost point he heard a noise behind him at the wire. Doubling back he found the same German attempting to escape, and with one leg already the other side of the wire. The sentry then ran the man through with his bayonet, and he died next morning. For some reason this case was commented on by the civil authorities, and it was actually suggested that the sentry should be tried for manslaughter. This I very strongly opposed when the matter came to me for review, recommending, on the contrary, that the man should be promoted for zealous duty. I am glad to say my suggestion prevailed, and the sentry became a lance-corporal. Now you don't suppose this man liked sticking his bayonet into that German? I expect he just hated it. But his sense of duty impelled him to carry out his orders. So, setting his teeth, he did it.

Even before embarkation for India the trials of the Territorials began. To complete units to strength many recruits, both officers and men, had to be accepted, although their knowledge of soldiering was *nil*. The reasons for this understrength were many, and here again I am hoping our Chairman may enlighten us. I am not sure I am right, but I had understood the main reason was because it was only in a proportion of units that *every man* accepted the obligation to serve overseas; in others an acceptance by, say, 50 to 80 per cent. left a considerable deficit, which had to be completed. Another severe blow was the loss of the regular officer attached to each battalion as Adjutant; he was taken from some units before embarkation, in others on arrival in India, and in the case of the remainder, shortly afterwards. It had naturally been the custom to rely tremendously on the adjutant, but every regular officer was badly needed with his own Corps, therefore each Territorial battalion had to supply its own regimental staff. As was only to be expected, the weakest point in the Territorials was their lack of knowledge of "administration" and especially of Indian regulations; this resulted in a great deal of unnecessary discomfort to all ranks.

I have already stated that one object in sending the Territorials to India was to enable them to complete their training; for this purpose

concentration was, of course, essential. Every effort was made by the authorities to allot units to stations where they would remain for a considerable period, and where every facility for training existed; but the various necessities of a world-wide war, combined with an ever-changing, and at times menacing, internal situation, to say nothing of the demands of climate as the hot weather approached, made obligatory not only large detachments, when concentration was so necessary, but also frequent moves from one station to another. This was one of the Territorials' greatest trials. It was also very expensive for the officers. The Territorials themselves, not understanding the motive behind each detachment or move, were lost in amazement at the apparent want of consideration and uselessness of such constant changes.

Nor was it very long before Army headquarters called for returns (to Simla direct) giving each man's former occupation, his trade and his qualifications. As needs arose—and they came quickly—C.O.s found themselves, willy-nilly, deprived of their best men, transferred all over India as clerks, supervisors, mechanics, chauffeurs, signallers, machine-gunners artificers and every other kind of specialist and workman. This caused every C.O. to despair about the efficiency of his command for service in the field; as one of them said to me in a hopeless tone:

"What am I to do? The authorities think, apparently, that any blighter, even untrained, is good enough to fight, and that with such men it is quite easy to win battles. I can only hope they will not be grievously disappointed." I felt much in sympathy, and yet the constant drain was unavoidable.

Still more of the best N.C.O.s and privates were taken as officers, for in the ranks of the Territorials were many public schoolboys and others most suitable for commissions. When the question of the shortage of officers in both British and Indian Services became acute, it was found necessary to tap this source of supply. In many cases the boys themselves were anxious for promotion; orders were received, moreover, in 1915, which, after reviewing the situation, directed that all those considered in any way eligible were to *be encouraged* to apply for a commission; in this way hundreds of excellent officers were provided, but it did not tend to make matters easier for the C.O. Nor did he fare much better as regards his own officers, who were coming on fast. In 1916 the demand for more leaders became very insistent; Territorial units, like everyone else, had to try and carry on with depleted numbers, for C.O.s were called on to supply officers not only for general, technical, administrative, and personal staffs, but also, at a moment's notice, to fill the places of casualties in the field.

You will ask (*a*) how in these conditions did Territorial units get along at all, and (*b*), how did each one keep up its strength? They got along by the steadfastness and grit of the officers and men who remained, and their strength was maintained by frequent drafts from home. Of course these were untrained, and that was another trouble. The trials were, indeed, many; but it will remain for ever to the glory of the

Territorials in India that, in spite of them, they never once faltered in their strides towards efficiency. Units, of course, varied a good deal on arrival in India in their preparedness for war; it depended a good deal on the amount of instruction they had received at home, and on the capabilities as trainers of their brigadiers, their C.O.s, their regular adjutants, and their officers generally. I should like to give you some facts to exemplify their grit, efficiency, endurance and achievements, which may be taken as typical of the whole. Early in 1915 I had under my command in Delhi, Agra and Bareilly the 1/4th Wilts, the 1/6th Hants and the 2/4th Duke of Cornwall's, and I was directed to subject each battalion separately to the " Kitchener Test." This was a very comprehensive kind of inspection, inaugurated by the late Lord Kitchener when Commander-in-Chief in India. It consisted of a series of situations made known to the Commanding Officer by the General taking the tests, and the whole carried out under war conditions, in so far as such conditions can be reproduced in peace; in fact it meant three very strenuous days, and all this time the battalion, having been provided with the necessary supplies and transport, had to fend for itself, protect itself, and undertake aggressive action when the situation required it. Other troops were utilised in opposition, and the General Officer concerned, with his training staff, was present all the time, and allotted marks for each performance as it was completed.

Brigadiers were given a free hand to modify the original conditions of this test as regards the Territorials, especially as the training season was far advanced, with the hot weather approaching. Personally, I cut down the total period to about thirty-six to forty hours, and generally began before dawn with a fifteen-mile march in field service order, each man carrying 100 rounds of ball ammunition. This was followed immediately by an attack with ball on a position prepared by another unit. On the completion of the attack the Commanding Officer was told to select a bivouac camp, arrange its protection and await orders. He was then—(as soon as he was in position)—attacked by other troops, and shortly afterwards received instructions for a small night operation, and so on.

I took the 1/4th Wilts first, as being an older unit than the others, and therefore more prepared; they came through the test remarkably well, the officers never getting flustered, and not a single man falling out in the long march. I was so pleased at the end that I told their Commanding Officer (Lord Radnor) that I envied him his command. Here was a typical case of a Commanding Officer who knew his men, had their welfare always at heart, and had taken immense pains to make his unit efficient in every way. On the return of my Brigade-Major, after handing over the slip containing the fourth " situation " as the sun was sinking on the evening of the first day, I asked him whether the Colonel seemed flurried, for I was not at all sure that I was not asking too much. He reassured me by saying :—

" Not a bit, sir; his only remark was, ' What, *another !* ' "

A week later I was much struck by one decision of this Colonel's. Half his battalion was detailed to go to Chakrata in the hills, while the remainder spent the hot weather in Delhi. I gave him the choice, being very senior and new to India, of taking his headquarters up to the hills; he declined, however, because he felt he could not summer in the delightful breezes of Chakrata, while the greater portion of his men sweltered below.

It was now the end of March, with two units still to test: one at Agra and the other at Bareilly. As I knew well Agra's great heat at this season, it was necessary to hasten there at once. Colonel Playfair's battalion (1/6th Hants) was newly raised; the men were very young and only partially trained; moreover, the unit had been split up into many detachments since arrival in India, and had only just got together. The Commanding Officer was most indignant at the very idea of any collective test, for which he declared his men were quite insufficiently trained. I thoroughly agreed with him, and, indeed, had already represented the matter, but was overruled. Higher authority felt that some idea of the relative value of the various battalions must be obtained as soon as possible. As a matter of fact these Hampshire lads (they looked absurdly young) did very well. I remember the " overhead " covering fire in the attack with ball was so realistically bold that I marvelled at its temerity. Speaking to Playfair about it, he laughed, and muttered something about " Where ignorance is bliss ! "

There still remained the Bareilly unit (2/4th D.C.L.I.) to be tested; also very young, and with little help or guidance given it to date. Although we passed the starting point for the long march at 4 a.m., it was extremely hot by the time this was completed, about 9, when the Commanding Officer got the slip to reconnoitre and attack a prepared position. Owing to a misconception of orders later on, and the intense heat, the men had a very trying time, so much so that I was concerned about them; the Commanding Officer, however, was quite cheery, and assured me his lads would be as fit as possible in the morning, which turned out to be the case. They were Cornish boys of very sturdy physique, but young; their rapid recovery I thought spoke well for the grit and endurance of the men of Cornwall.

In the Territorials which came to India, physique and age varied to an enormous degree, the former in some units being excellent, while in others it was not so good. As regards age, the 2/4th D.C.L.I. and the 1/6th Hants were just lads, and there were many more battalions like them. On the other hand the 23rd Rifle Brigade at Multan was composed almost entirely of old soldiers. This was one of seven Territorial battalions formed in October, 1915, and attached to the Rifle Brigade. The men came from the " National Reserve," and at the outbreak of war had offered their services for any duty required of them. These men had been employed in England up to that date in guarding railways, docks and other vulnerable points; about 250 men of the 23rd possessed war medals, or long service and volunteer decorations. The battalion was raised by

Colonel T. E. Turnbull, and came under me in Multan when I was commanding the Derajat Independent Brigade. Multan is a hot place, and the men had been there nearly two-and-a-half years. When I inspected them in the hot weather of 1918 it struck me that all ranks were showing the effects of the heat considerably, while their sick roll was a heavy one. I got them moved, and they were transferred to Bareilly, looked on as a very healthy station. Strange to relate, the men were less fit there than in Multan, where they had done some really excellent, though by no means exhilarating, work. Besides heavy garrison duties the battalion had to furnish detachments innumerable, including a company at Amritsar. The garrison gunners having left Multan, the guns and machine guns in the Fort had to be manned by the 23rd Rifle Brigade; fortunately their cosmopolitan composition enabled them to provide teams without any great difficulty.

One summer the environs of Multan were not only infected with cholera and malaria, but also with a very virulent outbreak of plague; this necessitated a strict cordon round cantonments, towards the city, involving heavy picquet duty, which was admirably carried out by the 23rd. One N.C.O., left at Amritsar as electrician when the company was withdrawn, was brutally murdered by the natives in the rebellion of April, 1919.

This is not a tale of woe, but simply a portion of the record of one Territorial battalion's sojourn in India, with an account of all it was expected to do, and how well it did it. There was none of the exhilarating excitement of hard-fought actions in the field; only difficult, arduous and rather uninteresting garrison duty with the thermometer reaching 124° in the shade. Such achievements cheerfully performed by a Territorial battalion of old soldiers speak much for the Force, deserve well of the State, and merit the approbation of soldiers and civilians alike.

A younger, but well-seasoned, battalion relieved the 23rd in the shape of the 1/4th Buffs under Colonel G. Gosling. This unit had been at Aden from August, 1915, to January, 1916, and therefore had qualified for the 1915 Star. Besides keeping the Multan area quiet during the risings of 1919, the men were utilised in the district outside this area to travel about in the hottest part of the hot weather just to show themselves, and, where necessary, uphold the prestige of the British raj. The unit built itself an armoured car out of railway trucks and sheet-iron, and christened it "The Multan Lamb." In this improvised vehicle parties of men dashed up and down the line to any threatened points. These services were most valuable, and the mere knowledge that parties of British soldiers could arrive in an incredibly short space of time at any seat of disturbance had a very salutary effect.

As a general rule, and especially with the older units, the Territorial Force was to be congratulated on its commanding officers. I have mentioned Lord Radnor: he had been commanding for some years, knew every man in the battalion, looked most carefully after the welfare of his men, and kept a strict discipline. Blessed with a good second-in-

command, and an excellent body of officers, it is not surprising that the unit was in capital order. Later on Lord Radnor became a very successful brigadier. Colonel Harvey, of the 1/5th East Surreys, possessed the same attributes, resulting in an equally efficient battalion. I had this unit with me for a long time, and got very fond of it. All ranks were extraordinarily responsive. Colonel Harvey, after his regimental tenure expired, held commands in S. India and Hong Kong. Colonel Playfair, of the 1/6th Hants, was an old regular, and a well-known rifle shot. He was just the man to raise and train a young battalion of Hampshire lads. I am delighted to see that he is still in harness. The 1/4th Border Regiment, in Maymyo, Burma, owed much of their efficiency to their Commanding Officer, Colonel Waterlow, D.S.O., who trained them to such a high standard that they received wonderfully good reports.

Then there was Colonel Frank Johnson, D.S.O., 1/6th Royal Sussex Regiment, who achieved undying fame as the Administrator of martial law in the Lahore area during the disturbances of 1919. His many proclamations, all commencing "Whereas," are admirable models of how such notices should be framed. The firm, just and unflinching rule he established at a most critical time, not only earned for him the admiration and gratitude of Europeans and law-abiding Indians alike, but the honour of having his portrait hung in the big hall of the Punjab Club in Lahore. Beneath is no name and no inscription, simply in gold letters the one word "WHEREAS." A fitting tribute for all time to a Territorial officer of exceptional merit.

These few names are given not only as typical of the battalion commander, but also to bear witness to the valuable services rendered by Territorial officers in a higher and more extended sphere.

The county of Hampshire was very largely represented in India. Besides seven batteries of Field Artillery, four battalions of Infantry went out with the 1st Wessex Division on 12th October, and three more followed on the 12th December, 1914. In addition, the 9th Battalion arrived in 1916, and remained until October, 1918, when it proceeded to Siberia *viâ* Vladivostock. No units had a better record in India than the Hampshires, or were more genuinely liked; as regards the 9th Battalion, it is interesting to add that it was the only British unit to go to Siberia (except Colonel Ward's battalion), and that it did very well there.

To bring my British units up to strength when I was commanding the 4th Division at Chaman in the third Afghan War, the authorities sent me some hundreds of demobilised Territorial officers and men from Deolali and Bombay, details that were actually on the point of sailing home, and men who gulped down their bitter disappointment in the most splendid way when told their services were absolutely essential on the frontier. Splitting them up amongst various corps, I took the earliest opportunity of visiting them to address each party and tell them how much we all sympathised with them in their disappointment,

and how greatly we admired their stoicism and spirit. I was most sorry for these good fellows, almost pulled off the ship—pulled off, too, just as they had said "Good-bye" to India, and, after so long an absence, were looking forward eagerly to greeting their wives, children and relatives once more.

There was a great deal of comment as regards the natives, and much excitement amongst the European population in 1914 about the advent of the Territorials in India. All Europeans, and especially civilians, were much struck with their patriotism and example, and from the outset did all they could to show their appreciation of the splendid way in which these *citizens* had abandoned homes, relatives, professions and trades to volunteer for service abroad, although in many cases it was a matter of much personal sacrifice, and often a case of great monetary loss.

On the arrival of the first Territorial division in Bombay, Lord Willingdon's warm welcome and the noble hospitality of the Bombay Yacht Club on the night of arrival in entertaining 97 officers of that division at dinner, aptly voiced the feeling of the whole European community. Later on, people vied with one another in fêting the men, and asked them out in batches to tennis, musical parties, picnics, concerts, motor drives, etc. All this came under my personal knowledge in places so wide apart as Karachi, Lahore, Lucknow, Multan, Bombay, Calcutta and Burma.

The Y.M.C.A., as usual, came to the front; what the Territorials would have done without that Association I don't know, for it made tremendous efforts to provide recreation, instruction, and amusement for the men. Especially useful and greatly appreciated were the lectures arranged by the Y.M.C.A., all over the country, on subjects such as India, the inhabitants, its wonderful history, etc. The Association also organised regular tours to places of interest, and without them few men would have had the opportunity of visiting in comfort such historic and interesting cities as Agra, Delhi, Jeypur, etc.

One wealthy jute merchant in Calcutta invited batch after batch of eight N.C.O.s or privates to his beautiful home, and entertaining them royally on the fat of the land, sent them out daily in his motor-cars to the Zoo, cinema, races, etc.

Nor were native princes and Indian gentlemen behindhand in offering hospitality and welcome: the Maharajah of Mysore himself received and entertained the 2/6th Royal Sussex Regiment at Mysore, and had them conducted over his palace, with its priceless treasures. This was a privilege never granted to British troops before or since. Entertainments and refreshments were provided in many cantonments, and at railway stations, by Indian gentlemen of various classes.

I know the Territorials were both touched and gratified at their reception; they were probably much surprised, too, but not as surprised and puzzled as were the ordinary natives when they first met them To begin with, seditionists had spread abroad everywhere reports that

England was at her last gasp, and could never replace the British garrisons sent overseas. When, after the latter's departure, fresh white troops came pouring into the country, there was much astonishment. In the second place, although the men occupied the barracks, and had similar duties to the old British soldier, still they seemed quite different; they treated the Indians with much more civility, they appeared greatly interested in all they saw, they never got drunk, and they never hammered anyone! Thirdly, they seemed to have much greater command of ready money, which they spent freely. A native shopkeeper in Multan put it very well to the local brigadier when he enquired: "Who, sir, are these new soldiers who have cheque books?"

It is a fact that the Territorial soldier arrived in the country with no anti-Indian bias at all; he treated the Indian quite courteously, but at the same time in his dealings with the native showed plainly, by his look and manner, that there was no question of equality. I was much struck with this as regards my Territorial chauffeurs, of which I had several, as, bar the first one, the particular man in office was called back to duty, invariably, after a short period. The first was a private, called Moore, in the 1/4th Wilts, and a better chauffeur never drove a car. He remained with me over two years, and got on remarkably well with all classes of Indians, whether native baboos, Mahommedan servants, Sikh and Gurkha orderlies, or frontier Pathans. A Lancashire lad I had later on further exemplifies what I am saying. My wife and I were starting out in the car, and being much afraid always lest her Dachshund should be run over, she called out for him: said the Lancashire boy: "If it's the dawg you want, I saw him being walked up and down just now by the *native lady*." Further enquiry elicited the fact that the man referred to my wife's ayah!

The Territorial officers' theoretical knowledge of their manuals was very good; it is immensely to their credit that they had studied them so well, and, in many cases, were able to impart the instruction gained. Early in 1916 I was much struck with a lecture on "protection" (outpost duties) given to the men of his company by Major the Hon. E. Strachey, of the 1/4th Somersets. He knew his subject thoroughly, put it to his audience in the simplest language, explained the leading principles very lucidly, and gave apt illustrations from military history.

There was very little crime in Territorial units. The men were extraordinarily well-behaved. Let me give you an instance: the 1/4th Wilts, from the time of their landing in India in 1914 to their departure for Palestine in 1917, had not a single courtmartial, and not one case of drunkenness. I think this must be an absolute record.

From what I have said you can realise easily that with troops like these it was a very delightful occupation to supervise their further training. The responsiveness was so wonderful, the eager desire for efficiency so manifest, and the keenness to make good so very marked. All that units required was help, guidance, and sympathy. I never met troops more susceptible to *sympathy*. Given sympathy, combined with

a thorough understanding of their characteristics, idiosyncrasies and requirements, then one was able to get at these troops, when there was *nothing* they could not do. Little opportunity was given me of testing Territorials in the field. On the N.W. frontier, in 1915 and 1916, I had regular troops. In the 3rd Afghan War (1919) there was no collision with the enemy after I had taken over the 4th Division. I had, indeed, the 2/4th Border Regiment with me in the Mohmand blockade, but there was very little serious fighting. The men of this unit were of fine physique, and as keen as mustard. It was a great pleasure to deal with them, and to have a chat with individual N.C.O.s and men in the blockhouses. On one occasion a picquet of this unit, put out to protect the Viceroy on his visit, was threatened and heavily sniped by the Mohmands. On withdrawal it was followed up by the enemy with some determination. I happened to be present as the picquet was approaching our nearest blockhouse, and noted the extreme reluctance with which the men withdrew under orders. I saw that their eyes were blazing, and that they were full of suppressed excitement. Quite the right fighting spirit. About a month later I added a hundred men of the 2/4th Border Regiment to a column I was taking out to destroy some villages. The start was at 4 a.m., and the men returned to camp at 7 p.m., having marched 26 miles and helped to destroy two villages. It is not exactly child's play, pushing over strong mud walls, blowing up towers and burning houses. I thought the day a good test of endurance, and all ranks were very cheery at the finish. Most of their haversacks were full of fowls! I wish I had time to say more of subsequent happenings to battalions I was connected with, and after they had been fully trained and dispatched to some front or another. Some small detail of two units I can give you as an illustration of the fact that the battalions from India bore their share of casualties in the field:—

1/4th Wilts, from India to Palestine, 1917: Continually in action 17th November, and from March to September, 1918; had several Officers killed and wounded (including the Commanding Officer, Colonel Armstrong—killed) and about 35 per cent. other ranks.

1/4th Somerset L.I., from India to Mesopotamia, 1916:—

Killed ...	... Officers	3	Other ranks		105
Wounded ...	... „	10	„	„	130
Died on service	... „	3	„	„	68
		16			303

In conclusion let me say I shall always regard it as a privilege that I was enabled to watch—and in some cases, I hope, do a little to help—the progress towards proficiency of a large portion of this fine body of Territorials. As I have mentioned, my connection lasted for a period of about six years, long before the end of which all ranks may be said to have become the "finished article." By that time they had officers

and N.C.O.s possessing power of command—nearly all were certificated at the various schools; the signallers were complete and well trained, Lewis gunners and bombers handy with their weapons, while the men, confident, hardy and acclimatised, were fit to go anywhere and do anything. It is a record of which any body of troops may well be proud.

DISCUSSION.

MAJOR-GENERAL C. G. DONALD: As the General Officer commanding the Wessex Division who took the Division out to India in October 1914, I think I ought to get up and say a word or two. It has been very gratifying to hear from the lecturer of the great efficiency of the Territorials after serving such a very short time in India. That certainly speaks well, as he said, for the Brigadiers, for the Commanding Officers, and indeed for all ranks. It shows the energy and keenness that they put into their work, that after being such a short time in India they were considered as efficient as the lecturer has told us. I should like to tell you how it was that the Wessex Division came to go to India at all, and how it was treated on its arrival. The whole Division was assembled on Salisbury Plain at the beginning of August, 1914, where they began to train hard. Towards the end of September I received a telegram saying that Lord Kitchener wanted to see me at the War Office next day. I went to the War Office and was taken into Lord Kitchener's room, and you can imagine that I got a little bit of a shock when he said: "I want you to take your Division to India; will they go?" You must remember that at that time the Imperial obligation did not apply to the Territorials. I said: "Well, Sir, I do not think any body has thought much about it, but I am perfectly certain that if you want them to go to India they will go there right enough." He replied: "Very well, go back to your Division now; get hold of them to-morrow morning on Salisbury Plain, use your personal influence, and tell them from me that I want them to go to India, and that by going to India they will be performing a great Imperial duty. I have to bring white troops back from India to Europe, and I must replace them there by white troops from home. Tell them that they are to train hard through the cold weather in India, and at the end of six months I intend to bring them home from India and replace them by less well-trained troops. Tell them, also, that they will share in all the honours of the War just as if they had gone to France. Tell them, also, that I will come down to Salisbury Plain and say good-bye to them"—and he did.

The Division left England on 9th October and arrived at Bombay on 9th November. They received a splendid reception, due firstly, no doubt, to India being pretty well depleted of white troops, and, secondly, because it was a unique thing for British Territorials to arrive in India. The Government of India had engaged and furnished bungalows for the officers, and furnished the officers' mess with everything. They did the same for the sergeants' mess, and Regimental Institutes. Native cooks and, in fact, all of what is called the native establishment in India had already been engaged for the Territorials, so that the unit simply marched into its new station and found everything ready, which is not the experience a British unit usually has in marching into a new station in India. A few weeks afterwards, the Home Counties' Division came out and they were followed a month later by the 2nd Wessex Division. The three Divisions were scattered all over India and the Commander-in-Chief told me that he would not allow me to come home until I had been all over India and seen every unit settled down in its

station. It was a pretty strenuous time, and it took me five months to get right round. During that time I travelled twenty thousand miles.

I should like to say, before sitting down, that the Territorials have a grievance. A good many of them have written to me and said that they thought they ought to have had the 1915 Bronze Star, as Lord Kitchener had said they would share in all the Honours of the War. The matter was taken up in Parliament; questions have been asked and answered, and I believe it has been decided that they are not to have it. I can only say that they are very sore about it.

COLONEL SIR STURMY CAVE: General Donald has taken the Territorials up to the point where they were handed over to General Woodyatt. I should like, with your permission, to say a little about the early history of the Territorials. General Woodyatt does not perhaps quite realise that the Territorial Force was the Volunteer Force, organised into a field army and called by another name. For 20 years before that was done, I spent much of my time and energy and what little ability I possessed in trying to persuade the authorities to so organise it. I was perfectly well aware that, as an unorganised force, if we were not altogether useless, at any rate it was very unlikely that we should be fit for service by the time that we should be wanted if war broke out. Nothing has gratified me more in what the lecturer has told us than the much-merited praise he has given to Lord Haldane and his scheme of organisation. I was never able to make any impression upon either the military or the political authorities. The political authorities did not want to spend the money because they thought it would not catch votes, and the military authorities lacked confidence in the Force and did not believe an efficient mobile army, organised into divisions of all arms, could be made of men so little trained as was possible if they had to earn their livelihood in their civil occupations. Undoubtedly it was a proposition which wanted some proof, and I devoted my energies, and the energies I may say of those volunteers who were under me, to endeavouring to demonstrate that it was possible.

After the Boer War, there was a Royal Commission, as you recollect, under the chairmanship of the Duke of Bedford, and many of us were called to give what is called evidence, I myself amongst the number. When I got home I wrote to the Secretary and said: "What we have given is not evidence, but our opinion. If the Royal Commission will accept some evidence, I will endeavour to give it to them. If they will send me a telegram on any Friday afternoon to mobilise (I was in command of what was called a field army of a battalion as well as four or five other companies) I will mobilise the field service battalion at Basingstoke. You can inspect it there on Sunday afternoon, and during Sunday night we will march to Winchester, 18 miles, and we will attack Winchester at daybreak. If the Royal Commission will come out and see how this is done, that will be some evidence." I went down to Basingstoke that night and I told the Company there of the challenge I had made. I told them I thought it would be accepted and that I hoped it would be a thoroughly cold, dark night (it was in December) so that the Royal Commission might see the stuff they were made of; and they were very much disappointed that the challenge was not accepted. It was not until Lord Haldane came that anybody, either military or political, would undertake the organisation of the Force. He did so, and when we were organised we got very scant encouragement from both military men and politicians. Some of the military were still doubtful whether we should be any good—not all of them. Some of them were convinced that we would play our part well. But this was the sort of thing that was said in public by a very great soldier, for whom I have the deepest respect. I know that what he wanted was the safety of the country, and he went about his business in the way that he thought was most likely to accomplish

his object, but it was not encouraging to the Territorial Force. He said in 1912, after the Territorial organisation had been in existence for four years: "The Territorial Force is now an acknowledged failure—a failure in discipline, a failure in numbers, a failure in equipment, a failure in energy." I had a long correspondence with another very distinguished General, and in the course of conversation with him I pointed out to him that the most important factor in the problem of military efficiency is the psychological factor—the individual man's self-discipline, his good behaviour, his heart being in the thing, and the chance being given to him not only to go on but to keep on. But I could not convince this other gallant General. This is what he wrote to me: "Therefore if the psychological is equal or a trifle minus; if the physical development is equal or a trifle minus; if the educational standard is equal or a trifle minus; if our training is equal or considerably minus; if our organisation is equal or considerably minus; if our numbers are equal or hopelessly minus; if our discipline is equal or non-existent, it appears to me that we shall run, shall we say, a fair chance of a thoroughly sound licking, and deserve it, too." That is the sort of encouragement upon which we had to build up the military force which you have heard described so ably and so kindly and so well by General Woodyatt. There is just one other little detail I would like to add, because the General has told us that he did not know very much about these troops that went to the front through India. I would like to tell you what I heard from a distinguished General in that respect, namely, Lord Allenby, who wrote to me on the 17th September, 1917, from Palestine: "The Territorials have done splendidly in this war and you must be proud of them." He spoke not of those Territorials who were under him at that moment, because it was before the advance on Gaza and Beersheba, but evidently of those Territorials whom he had seen in France. Sir Stanley Maude wrote to me on the 29th October, 1917, very shortly before his lamented death: "I have had the good fortune to command about as good an Army as anyone could wish for. It was really magnificent the way they fought all through last winter and won." You know that most of his European troops were Territorials, and he says in his letter: "Amongst them, the 1/4th Hants played their part nobly, and distinguished themselves on many occasions." With regard to the 1/4th Hants, as the lecturer mentioned the casualties in some units, I should like to tell you the record of the 1/4th Hants. They went to Mesopotamia in April, 1915; they were more or less fighting the whole time in the front rank; and they finished up in Persia, from which they came home in 1919. They had 20 officers killed in action, and their casualties in men amounted to 700. The 2/4th Hants., which had two years at Quetta, 15 months in Palestine, and then nine months in France, had a great many casualties—I do not remember quite how many, but I happen to have a list of the honours they won in four months only during the fighting in France. One bar to two D.S.O.s; three D.S.O.s; two bars to M.C.s; and 19 M.C.s. I will not trouble you with all the details. They finished up with six bars to M.M.s, 134 M.M.s, five or six French decorations, and eight mentions in despatches—a total of 190 honours for the fighting of one battalion during four months in France! This was the 2/4th Hants, or one of the two battalions formed out of the old Volunteer Corps. There was yet another battalion built up on the nucleus of the two Cycle Companies of the same 1st Hants Volunteer Corps. This battalion was commanded by Colonel R. A. Johnson, who was one of my captains, and all four of his senior officers were old subalterns of mine. They not only went to India but to Vladivostok and spent the winter in Siberia.

MAJOR-GENERAL SIR DUDLEY RIDOUT: I should like to pay my tribute to the value of the Territorials that I had under my command during the war. At

very short notice one of the original battalions 1/4 K.S.L.I. that has been mentioned as having left England in 1914, came from Burma to Singapore to help us during the mutiny, February, 1915. Fifteen hours' notice was all they were given. They reached Singapore in the middle of the night, they were rushed off in motor-cars; for the next six weeks or two months they were in the field, and did extraordinarily fine work. After the acute period of the mutiny was over, I received information one day of an insurrection in Kelantan, 400 miles up the coast of the Malay Peninsula. At 11 o'clock a.m. I issued orders for the men to embark at 5 p.m. They were to equip themselves for one month in the field, and at 5 o'clock I inspected them on the wharf. They proceeded that night to Kelantan; a very creditable performance. They did extraordinarily good work up there. General Donald, the first speaker, has referred to a promise which was made to the Territorials that they should go to France after intensive training. I am glad to be able to say that in the case of this battalion, the 1/4th K.S.L.I., that promise was redeemed. The Colonel, who is here this afternoon, Colonel Garratt, told me of this promise, and I said that if the men could satisfy me that they could train up to battle standard, I would see what could be done to get them to France. By June, 1917, I was able to report that they were thoroughly efficient, and orders then came for them to come home. Their arrival in England was marked by an episode which showed their very high state of discipline. On arrival they were told that they were not to land but to go straight off to France. These men had been abroad for 2½ years; they had left at very short notice, and they expected at any rate a week at home before starting for the serious business in France. But they proceeded without a murmur, and I am proud to think that the Secretary of State wrote a letter of eulogy on the fine state of discipline which existed. The subsequent history of the battalion in France was a very fine one. It passed from the base up to the front in record time, and subsequently did remarkable service with the French at Bligny, where they won the honour, the Croix de Guerre with Palms, which was presented to the battalion recently by General Bertholet, who pinned them to the Colours. That was a very fine honour for a Territorial regiment to win. Reference has been made to the Territorial battalion that went on to Siberia. I saw it passing through Singapore and they were an extremely fine body of men. Later on, I had information from Siberia that they had created a very good impression by their smartness and efficiency. The 1/4th battalion of the K.S.L.I. has the honour of being the first battalion under the new scheme to get a full establishment. The lecturer has referred to the extreme efficiency of the 1/4th Wilts. I would like to say it was my great good fortune to have one of their officers sent to me as my G.S.O2.,and a finer G.S.O.did not exist—a man of enormous ability who not only took on the work of G.S.O. but became staff officer to the local forces, of which we had between four and five thousand. If the remainder of the battalion were like that G.S.O., it was indeed a battalion of great merit. I thank you very much for listening to me; I thought I would like to let you know that this battalion of the K.S.L.I., a very much travelled battalion, which went as far as Hongkong, New Zealand, and other places, did most extraordinarily good work, and was pre-eminent in sport in Singapore. One of the easiest jobs I have ever had was with this regiment, under Colonel Garratt. There was no necessity to drive them. They set their own training tables. It was not a question of working five hours a day in the tropics; they worked ten or more—they clamoured for more work, and the result is shown by their extraordinarily fine fighting at Bligny when they aided the French so nobly.

BRIGADIER GENERAL H. A. IGGULDEN: I would like to say a few words on this interesting lecture as I had command of a very large number of Territorials

in India during the War, probably between 30,000 and 40,000. I would like to endorse every word that my old friend the lecturer has said regarding their patriotism, their excellent behaviour and the splendid way they trained on in every way, both as ordinary soldiers and as specialised soldiers. I regard it as very largely due to the correct attitude of the Territorials towards the natives and their general demeanour out there that we enjoyed, during the whole War, from August, 1914 to the end of 1918, tranquillity, peace and quietness in India. A great deal is due to them for that. I would like also to refer to the great sympathy and help that the Viceroy, Lord Chelmsford, gave to the Territorials throughout the War. Lord Chelmsford came to India as a Territorial officer, as a Captain in the Dorset regiment, and he spent from eight to nine months with them as a Company officer, so he knew pretty well what was what. Later on, when very large numbers of Territorials came out to India, it was a matter of great difficulty to entertain them, to provide recreation and various regimental institutes for them. At Bangalore I suddenly had 15,000 of them to cater for, and I recognised at once that to entertain and keep amused so many men was a difficult matter. I applied to Army Headquarters for funds to build recreation rooms and to provide means of entertaining them, but could get nothing. There was no money available for that kind of thing, and I was in despair. We raised a few thousand rupees locally, and I then determined to go up to Simla from Bangalore, a journey of 1,200 miles, in the hot weather, to see the Viceroy. He then and there gave me 50,000 rupees and a further 40,000 later on. The Maharaja of Mysore gave us 20,000 rupees, the Calcutta Turf Club 10,000 rupees, the Western Indian Turf Club 3,000 rupees, and so on. Eventually we were able, principally due to the splendid support that Lord Chelmsford gave us, to raise about 180,000 rupees, to provide the men with proper recreation rooms and keep them amused during their leisure hours. Thanks to Lord Chelmsford, in all the stations that I had anything to do with, I was always sure of his sympathy and help, and the Territorials owe to him a great deal for what he did for them in every way to make their burden in India as light as possible. I must also pay a tribute to the splendid work that was put in by the ladies of the stations that I was acquainted with. They helped in every possible way. They gave up their time to work in the canteens and in the tea rooms; they provided recreation for the men, and a very large number of them invited the men to tea every day, especially at Bangalore, where Territorials to the number of 30 or 40 were entertained every day of the week. For months on end the ladies of the station took them out to picnics and teas, looked after the hospitals, and helped them to while away the long summer days and the dreary times they would otherwise have experienced.

THE CHAIRMAN: Ladies and Gentlemen, as there appears to be nothing controversial in what has been said in the course of the discussion, the lecturer has nothing to add to the remarks he previously made. It is necessary to make a subject interesting when you are trying to convey information to people who want helping through with it, and the lecturer has provided, in the delightful manner in which he delivered his lecture, the jam which has carried the powder very nicely and comfortably. The subject of this lecture is the Territorials in India. Unfortunately, I was not in a position to know anything about the Territorials in India, but I am sure that everybody who was connected with the Territorials is extremely interested to hear that such an impartial man as General Woodyatt, who had complete knowledge of the Territorials inside and out, under very unpleasant conditions, was able to form such a high opinion of them. Personally, I have always been a firm supporter of the Territorial Forces ever since I had to do with them. I always believed in them, but the difficulty was that the old Army was a

very close craft Trades Union and it did not like diluted labour. It was thought by some of the officers—I was not one of them, but I know a great many who were of the opinion—that it was not possible for an ordinary civilian to approach to the high standard which all of us in the Regular army had reached automatically. The National Service League was also against us. It was working very hard in those days, and the more the Territorial army tried to get on and the more we tried to improve our position, the more some of the members in the War Office used to set about me because I was trying to make the thing a success.

The history of the Territorial army in the late War is one of the proudest that can be imagined, even in the annals of our extraordinary army, because you must remember that it was a purely voluntary organisation. It was raised from every section of society. When I was commanding a Division I have seen the fellows at work in dark, damp drill-halls, sweating away, in places like Birmingham, Liverpool, Manchester, and London, and receiving no encouragement from anybody. Nobody cared a blow what they were doing. People laughed at them and hated them. I used to say to them: "Never mind, lads, you will get a crown of glory some day. It is always the people who are persecuted who come out at the top in the end." We were persecuted and we came out on top. I believe it was that sort of feeling that strengthened the heart of the Territorial and made him what he was. If we had been flattered and pampered by everybody, I really believe we might not have been half as good a Force as we were. I used to say to the lads: "Look at the early Christians, they were persecuted; they were thrown to the lions and eaten up. They tell me that even now there are some Christians!" So the Territorial Force still goes on, so the Territorial Force is still doing its job. I think that my friend, the present Director-General of the Territorial Force, will agree with me that even now it is not a bed of roses to sit in the War Office and be in charge of the interests of the Territorial Force, unless you are a man who does not care a blow, which he is not. That is the only way in which you can live in an atmosphere of that kind. I was very glad to hear from the lecturer that, after I said good-bye to these Divisions and they passed away in the dark at Southampton, they gave such a good account of themselves when they arrived in India. There is one little lighter touch that I might tell you before we break up. I went down to see the 1st Wessex leave on the 11th October, and some nefarious General sent a telegram down saying that all Regular Adjutants were to be withdrawn from the regiments that were going. I knew something about India, and I knew how troubled the regiments would be if they arrived in India without their Regular Adjutants. A certain Staff Officer came to me after dinner and said: "Well, General, what about it?" I said: "Well, all Adjutants are to be withdrawn." He said: "What do you think I had better do?" I said: "As Director-General of the Territorial Forces, and as a high-class officer, there is only one thing for you to do, to circulate it, but if you take my advice as a private individual, you will go and lock yourself up in a cabin and do not come up again until the boat is two hours down the Channel and then you can give it to the General and say: 'Get off.'" By these evil methods a certain number of Territorial Adjutants did filter out to India. With regard to what General Donald said about being sent for to see Lord Kitchener with regard to the Division going abroad, that very morning Lord Kitchener sent for me and said: "General Bethune, I want the Wessex Division to go to India; do you think they will go?" I said: "Of course they will, they are soldiers." He said: "I want to be quite certain that they will go. You drive down in a motor-car, see the General and see the Divisions and make certain that they will volunteer to go to India." On the way down, apparently, General Donald passed me, because they were not satisfied with my diplomacy

and Lord Kitchener thought he had better see the General himself, so that we actually crossed on the road, he going up and I going down. I saw an officer of the Divisions, and said to him: "I am told by Lord Kitchener to tell you that after six months' training you shall come back to France and join in the battles." He said to me: "What do you think?" I said: "I am not paid to think, I am here to tell you." He said: "Do you think we shall come home?" I said: "If you ask me to promise that you shall come home, I cannot, but I tell you Lord Kitchener's promise." He said: "Thank you, I know what to think now." The pity is it was not necessary to promise all these things to the Territorials. From my personal experience of the Territorial it was not necessary to "kid" him; it was not necessary to humbug him. It only made bad feeling, which it has taken a great many years to eradicate. If they had been treated in an absolutely straight and honest manner, if they had been told—"Look here, I want you to go because it is for the good of the country"—they would have gone like a shot. We have heaped up troubles by promising things which it was not possible to carry out, and then, as a result, you have grievances. You have heard this afternoon how these Territorials carried out their work, and it is a great testimonial to the value of the Territorials and the Volunteer Forces. You remember that after twelve weeks of what was called "intensive training" we used to send drafts out to France during the War. The root of the whole matter was that the men became proficient because they had the wish and the will. Any Englishman who wants to do a thing will do it. If you take him by the snout and say: "Do this," he will say: "No, I am blowed if I will." But if you say to him: "It is up to you to do it," he will do it. Every Territorial General who has dealt with the men in that spirit has succeeded. It is all done by kindness. You can get these fellows to do anything you want, provided you treat them in the right way and in the right spirit. I am very glad that I have had the opportunity of presiding here to-day because I have the interests of the Territorials very much at heart. I was in charge of them from 1912–1917, and I was never disappointed by any unit or any body, with very few exceptions.

Ladies and Gentlemen, I am sure you will agree with me when I say that we owe a very great debt of gratitude to General Woodyatt for giving us this excellent lecture, and I hope you will pass him a very hearty vote of thanks for it.

LIEUT.-GENERAL SIR NOEL BIRCH: Ladies and Gentlemen, I was originally told off to move a vote of thanks to the persecuted Chairman—for a persecuted man he looks very healthy—but it affords me equal pleasure to second the vote of thanks to the lecturer for his address this afternoon. We have heard a great deal to-day about the Territorial Forces, but there is a great deal more to be said. What we owe to the Territorial Army has never been properly put before the public. It was the cheapest insurance the nation ever had. We have heard what they did for the Empire in India; I could tell you some tales about France in the early days of the War when there was not a man to spare anywhere, and the more publicity that is given to the Territorial Force the better. These men gave voluntary service to the State and they saved the Empire, and the same thing will happen again. We have now got the Territorial Army started, after great difficulties. It is going strong, except perhaps in the south, where it is not going quite so well, but everywhere else it is going strong. I think I know most of the Commanding Officers; certainly I know more than 70 per cent. of them, and it is a most inspiring and heartening thing to talk to these men, who are giving their time in this unselfish way for the good of their country. I have very much pleasure in seconding the motion.

COLONEL SIR STURMY CAVE: I should like to support the motion expressing the gratitude which we all feel to the lecturer for his lecture this afternoon. Gratitude is always a lively sense of favours to come, and I do hope that you, Sir, or somebody else will produce an Officer who will read us another paper about the fighting of the Territorial Forces at the various fronts.

The resolution of thanks was then put and carried by acclamation; and, on the motion of Major-General Donald, a hearty vote of thanks was accorded to the Chairman for presiding.

THE CHAIRMAN: Ladies and Gentlemen, before you go may I just call your attention to one little business proposition. The Council of the Institution are most anxious that Officers of the Territorial Army should become members of this Institution. Previous to the War the Force was well represented among the members of this Institution. Many of them, however, were killed, and at present there are only some 160 Territorial Officers who belong to the Institution, and of that number only 51 belong to London Regiments. We want, if we can, to increase the number of Territorial Officers, and if anybody present to-day can help us in that direction by pointing out to those Officers the advantages of belonging to this Institution they will be doing very good work.

TANK OR LIGHT MORTAR AS A WEAPON OF INFANTRY.[1]

By MAJOR C F. STOEHR, R.E.

IN an article in the November, 1919, numbei of the JOURNAL it was suggested that every platoon should have a tank which would be worked by one of its sections. The objections to this appear to want further consideration than the author has given them.

2. Any new arm which it is proposed to give to infantry should fulfil three conditions :—

(1) Its effective range should not be greater than the effective range of the rifle. If its range is greater, then it is an artillery weapon.

(2) Its mobility, in the sense both of actual speed and of the ground it can cover, should be approximately the same as that of infantry. If too slow or unable to accompany infantry over any ground the infantry will be hampered; if much faster than infantry then it is a cavalry or independent weapon.

(3) It should be required in all kinds of warfare, or, failing that, should be capable of being discarded without difficulty or waste of power. For instance, if a battalion is going to fight a rearguard action it can send its bombs back with the transport without amy difficulty or disorganisation.

3. The tank fulfils the first of these requirements, but with regard to the second it has been announced that our latest tanks can cover twenty miles an hour. With regard to the third point, a tank in conjunction with infantry is very like a steam hammer—only useful for heavy work and in a civilised country. But many of our small wars take place in country which is impossible for tanks, and against foes who do not have centres of resistance which require to be crushed. To have tanks as an infantry weapon would, therefore, be a waste of power

4. Another point against it is that in peace time it is out of the question to have tanks running about the ordinary English countryside, flattening out the fences and hedges, so that the opportunities which a battalion would have of training its tanks would be exceedingly limited unless the Army is redistributed and large training areas acquired. In the last place, in view of the difficulty at present experienced in filling the technical units, it seems hopeless to expect to get sufficient mechanics

[1] Written about June, 1920, before the issue of the Army Council Instruction which authorised the issue of trench mortars to battalions.

to run a tank per platoon. Even if obtainable by high pay their mechanical ability would be wasted whenever the tanks could not be used. Men enlisted for six or seven years' service could probably be trained during the last two or three years, but first of all a large proportion of officers must master the machinery, and that is a matter of several years.

5. Most of the advantages claimed for having a tank per platoon would be obtained by a large Tank Corps which utilised every opportunity of combined training. It would have the further great advantages that the personnel would really be masters of their weapon, which could hardly be the case with personnel trained primarily as infantry, and that with tank brains concentrated in one corps, technical, and probably also tactical, progress would be far more rapid. Finally, it would be far cheaper.

6. The light mortar is a more promising weapon to consider as an extra arm for infantry.

Its range of 1,000 yards or rather over brings it within the scope of an infantry weapon, while enabling it to be useful on any type of ground however open. After much discussion opinion in France inclined to putting light mortars under control of the artillery, but while this may have been expedient in trench warfare, where elaborately-timed plans were required, the main work of the light mortars was to take part in the artillery preparations; for open warfare it is obviously, owing to its limited range, an infantry weapon.

7. It can be carried either on a cart or a pack animal, or, if necessary, by porters, and with regard to its mobility in action "experience has shown that really fit, keen men can carry a Stokes mortar anywhere in the hills (on the Indian Frontier) that a Hotchkiss can go, but not at a fast pace."[1]

8. There is no type of warfare for which it is not useful.

9. Any infantryman can be trained in its use in addition to his training with other weapons.

10. It is very light for its power—one horse or mule load per mortar. Its ammunition requires a considerable amount of transport, but that is a defect inherent in any powerful weapon. If it is accepted that infantry requires great striking power then the necessity for the transport required must also be accepted.

11. If its shells had specially coloured smoke they would show our artillery where assistance was required.

12. Should it be a platoon, company or battalion weapon?

The smaller the unit to which it belongs the more intimate would be the connection and the less the tendency to regard it as a specialist arm. On the other hand, if it belongs to a platoon it is likely frequently to

[1] Article by Lieut.-Colonel Abbay in "Journal of United Service Institution of India," 1920.

happen that the ground requires such a separation between the mortar and the rest of the platoon that the platoon commanders will be unable to control both. Moreover, it is particularly required for use against strong points, and it is not likely that every platoon will encounter them; some power of concentration seems necessary. Owing to its rapidity of fire and the difficulty of ammunition supply, four mortars per company are unnecessary. Probably one could fire all the ammunition that could be carried, and one extra to allow for accidents would give plenty. For these reasons it appears to be more suitable for a company than a platoon weapon.

13. This, however, is really a matter of detail. The main question is whether the light mortar shall be an integral portion of the infantry and the arguments in favour of this merit serious consideration.

NAVAL NOTES.

GREAT BRITAIN.

The Near East Crisis.

The concluding part of the period covered by the following Notes (from 1st July to September 30th) was rendered eventful by the course of affairs in the Near East following the successful Turkish advance upon Smyrna. In pursuance of the policy of the Cabinet, announced on September 16th, to oppose by every means any infraction of the neutral zones by the Turks, or any attempt by them to cross to the European shore, the Mediterranean Fleet under Admiral Sir Osmond Brock, K.C.B., K.C.M.G., K.C.V.O., was reinforced. The first units to be sent were the light cruiser "Curacoa," flagship of Rear-Admiral W. S. Nicholson, C.B., and the Second Destroyer Flotilla, under Captain Roger Rede, D.S.O., in the "Spenser." The former, following her visit to San Sebastian, referred to elsewhere, proceeded to Gibraltar on September 16th and left the same day for Malta as a temporary additional unit to the Mediterranean Light Cruiser Squadron. The Second Flotilla left Devonport on September 16th for Malta, and on the same day the Local Flotilla at Gibraltar, under Commander W. E. B. Magee, of the "Rigorous," was ordered to complete to full crew and leave for Malta.

On September 19th, three battleships of the Atlantic Fleet were ordered to the Near East. The "Revenge," flagship of Rear-Admiral A. A. M. Duff, C.B., left Devonport the same day for Gibraltar, and arrived at Constantinople on the 28th. The "Malaya" and "Ramillies" left Invergordon on September 19th, and, after calling at Portsmouth and Sheerness respectively, also proceeded to the Near East zone. Three more light cruisers of Rear-Admiral Nicholson's squadron also followed the "Curacoa," these being the "Caledon," "Carysfort," and "Cambrian." Two more destroyer flotillas were also sent, the First, under Captain A. K. Betty, D.S.O., in the "Wallace," and Third, under Captain F. F. Rose, D.S.O., in the "Campbell." This brought up the total number of destroyers in the zone to nearly fifty. The Second Submarine Flotilla, under Commander Geoffrey Layton, D.S.O., in the "Lucia," and consisting of boats of the "L" type, arrived at Malta on October 2nd. The aircraft carrier "Ark Royal" was also sent out, from the Nore Reserve, and the Atlantic Fleet repair ship "Assistance." Mudros was made use of as a subsidiary base for the Fleet operating in Near Eastern waters.

The King's Visit.

The King left Buckingham Palace on July 3rd to visit the Atlantic Fleet in Tor Bay. After passing the night on board the "Victoria and Albert," at Portsmouth, his Majesty left in the royal yacht on the following morning, the ships in port flying masthead flags. Vessels at Spithead fired a royal salute and paraded guards on deck, and the royal yacht was escorted by the destroyers "Woolston" and "Wivern." The King met the Atlantic Fleet, commanded by Admiral Sir Charles Madden, G.C.B., G.C.V.O., K.C.M.G., off Lyme Regis, and led the divisions to their moorings in Tor Bay. King George remained with the Fleet until the afternoon of July 7th. Among the ships he inspected was the "Queen Elizabeth," "Barham," and "Hood," the latter for the first time. Wet and

squally weather interfered somewhat with the pleasure of the King's stay, but on the afternoon of the 6th, the skies clearing, his Standard was hoisted in the "Queen Elizabeth" and he accompanied the Fleet to sea for exercises. The same evening the Fleet anchored in Weymouth Bay, where the King returned to the Royal yacht. Next day his Majesty again boarded the "Queen Elizabeth" to witness aerial exercises, after which the flagship parted company from the rest of the Fleet at the Nab and steamed into Spithead, where the King transferred to the royal yacht. In a message to Admiral Madden, King George said how much he had enjoyed being at sea again with the Fleet, and expressed his admiration of its splendid appearance. "It is especially gratifying to me," he said, "to inspect the Fleet before you haul down your flag after a long and remarkable career. You have achieved what is an unique record in modern times in having served continuously afloat as a Flag Officer for no less than ten and a half years—including the whole of the war."

In view of inaccurate reports concerning the torpedo aeroplane attack on the Fleet which took place off the Isle of Wight on July 7th, in the presence of the King, the Admiralty issued a brief statement of the facts. The exercise was in no sense novel, and was designed as a *spectacle rather than as a critical experiment.* Similar exercises have been carried out on several occasions during the past three years, and the results on 7th July only confirmed previous experience. In order to afford practice to the torpedo aeroplanes, the Fleet approached to within a few miles of the aircraft base in broad daylight, at low speed, on a pre-arranged day, and at an hour signalled in advance to the aircraft. There was, therefore, no surprise attack, and the conditions were essentially unwarlike and unreal. Moreover, as is unavoidable in all peace exercises, the Fleet offered an unresisting target to the aircraft, whose attack was undisturbed by any counter-offensive action, whether by the interference of Fleet aircraft, gunfire from the light cruiser and destroyer screens, or heavy, medium, and anti-aircraft gunfire, combined with splash barrages from ships in the battle line. The aircraft were thus allowed to develop to the full their offensive, whilst the Fleet was debarred from defending itself in any way. In spite of these favourable conditions, the number of hits obtained on the battle line was small and of minor tactical importance. Throughout the operation the pilots of the attacking aircraft showed skill and dash in the handling of their machines, but, as already indicated, the conditions were so unreal that no practical lessons affecting the security of the Fleet can properly be deduced from these exercises.

Commands and Appointments.

The principal change in flag commands during the quarter was in the post of Commander-in-Chief of the Atlantic Fleet, which took effect on August 15th, when Admiral Sir John M. de Robeck, G.C.B., G.C.M.G., succeeded Admiral Madden on board the "Queen Elizabeth." The latter officer bade farewell to the Fleet, however, on 7th July, after the King's departure, when a farewell dinner was held on board the flagship. Subsequently, the "Queen Elizabeth" went to Portsmouth to refit, and the Admiral proceeded on leave. Before his departure from the Fleet, Vice-Admiral Sir William Nicholson sent him a message expressing the pride felt in the fleet by the flag officers, captains and ships' companies, and conveying the assurance that their ambition will ever be to emulate his great example of untiring energy and devotion to duty.

Rear-Admiral Sir Rudolf Bentinck, K.C.M.G., C.B., left England on 14th July, on board the steamship "Saxon," and arrived in Table Bay on the 31st. He succeeded Vice-Admiral Sir William Goodenough, K.C.B., as Commander-in-Chief

on the Africa Station on 2nd August, Sir William leaving for England on the 4th. The change in the China Command, although dated 10th September, did not take effect during the quarter, as Vice-Admiral Sir Arthur Leveson, K.C.B., did not leave England for the Far East until the end of September.

Retrenchment of Personnel.

The scheme, outlined in the last issue of the *Journal*, for reducing the numbers of officers and men to those considered sufficient for present requirements continued in force during the quarter. At the beginning of October, however, it was closed for officers of the rank of paymaster-commander and paymaster lieutenant-commander, the reduction of the number of officers of those ranks to actual requirements having already been effected. Similarly, the scheme as regards warrant officers, and officers promoted therefrom, was closed on 1st September, when it was announced that in view of the retirements effected and the consequent reduction of the lists to actual requirements, normal promotion to warrant rank to fill vacancies would shortly be resumed in the branches concerned.

In July, the following message was received from the King and forwarded as a special Fleet Order to the Royal Navy :—" I have learnt with great regret that the necessary reduction of the Royal Navy entails the retirement during this year of a large number of officers and men who took part in the labours and perils of the war, and who contributed so largely to its victorious issue. As their King I desire to express to them my high appreciation of their devoted service and deep sympathy with them in the enforced termination of their career in the Navy — that life so dear to them, as it was to me, and in which many of them gained distinction in peace and war.—George R.I."

NAVAL OCCURRENCES.

Recruiting Reopened.—During the quarter under review recruiting for the Royal Navy, suspended in January last, has been revived in certain grades. By order of 7th July, twenty seaman boys a week were to be entered between the ages of 15¼ and 16¾ years, and one ordnance artificer a month, but the re-entry of all ratings remained suspended, and officers and men of the Coastguard were not to recruit until further orders. On August 1st, recruiting for the Royal Marines was reopened, and on 1st September, recruiting for stokers, at the rate of 16 a week for Chatham Port Division, and 6 a week for each of the other Divisions.

Officers' University Degrees.—Retired naval officers who went through the Cambridge course, and who resided at the University under Admiralty orders for two of the periods of residence laid down for that course, are to be allowed by the University authorities to count this time as two terms of residence for University purposes if they decide to study for a degree. As officers who contemplate taking advantage of this concession can only do so if accommodation is available, it is desirable that they should apply as early as possible for readmission to the authorities of the college concerned.

Cruiser Change.—On 13th July the light cruiser " Cambrian," Captain J. D. D. Stewart, returned to Devonport from the North American Station on relief by the " Capetown," Captain E. R. Jones. Captain Stewart retired from the Service and the " Cambrian " was recommissioned in August by Captain M. L. Goldsmith, D.S.O., and replaced the " Cordelia," Captain J. C. H. Lindsay, in the

Second Light Cruiser Squadron, Atlantic Fleet. Captain Lindsay also retired and the "Cordelia" joined the Nore Reserve.

SOUTH AFRICAN FORCE.—On 14th July the Admiralty announced that a limited number of vacancies for appointment as sub-lieutenant in the Naval Service of the Union of South Africa were anticipated in the near future. Officers of the rank of sub-lieutenant, or lieutenant (ex-cadet) under four years seniority, who were retiring under the special retrenchment scheme of May 12th, were invited to forward their names if they were candidates for such appointments, preference being given to those who were born in South Africa, or whose parents were domiciled there.

"LAURENTIC" SALVAGE.—In the middle of July it was announced that the Admiralty salvage steamer "Racer" had succeeded in recovering another million pounds' worth of gold which the White Star liner "Laurentic" was carrying to America when she was sunk by mine off the Donegal coast early in 1917. Owing to accumulated sand lying on the hull, the divers found work very difficult, but were fortunate in being able, quite early in the season's operations, to locate the strong-room and pass up so many bars of gold.

SCHOOLMASTERS' PAY.—In the debate on the Navy Estimates on 18th July, Mr. Amery announced fresh regulations concerning the pay, promotion and retired pay of schoolmasters in the Royal Navy. The rates of pay are increased from 6d. to 2s. 6d. a day. Promotion to the rank of commissioned officer from warrant rank is to be made, if the officer has not already been specially selected for promotion to senior master, after fifteen years from entry, instead of 20½ years as hitherto, provided he is recommended and qualified by examination. Another important concession is the grant of the rank of commander to one per cent. of the schoolmaster branch, by selection, in conjunction with seniority as headmaster.

DOVER PATROL MONUMENT.—The memorial erected on the French side of the Channel to the officers and men of the Dover Patrol was unveiled by M. Raiberri, French Minister of Marine, on 20th July. It is in the form of an obelisk similar to that unveiled by the Prince of Wales on the cliffs east of Dover on 27th July, 1921, and is situated at Sangatte, about six miles from the landing stage at Calais. The British Navy was represented by Vice-Admiral Sir Roger Keyes, who crossed from Dover in the destroyer "Versatile," Commander V. L. A. Campbell, D.S.O.

ADMIRALTY CATALOGUE OF PICTURES.—In July the Admiralty ordered that a complete and systematic record of all articles of plate, relics, trophies, pictures, challenge cups, and the like, presented to or acquired by H.M. ships and naval establishments, was to be prepared. For this purpose, Commanders-in-Chief were ordered to furnish by October 1 a full return of all such articles in the units under their command, with a separate list of similar articles in official residences. The information will be recorded in a standard copy of the Admiralty Catalogue of Pictures, Plate, and Relics, the compilation of which will in future be undertaken by the Admiralty Librarian, Mr. W. G. Perrin, O.B.E.

NAVAL PLATE.—The Board have also had under consideration the question of the present accumulations at the naval barracks and elsewhere of articles of plate which have at various times been presented to ships not now in the Navy, or paid off, and unlikely to recommission. It is considered desirable that, wherever possible, such articles should be put to use for the benefit of the Service, so far as this is permitted by the conditions under which they were acquired. Ships in the Atlantic and Mediterranean Fleets which have only a small supply of plate will, therefore,

be permitted to apply to the Commander-in-Chief of their manning port for the loan of some, and it will be at the discretion of the Admiral to supply them.

UNEMPLOYED PAY.—On 21st July, it was ordered that officers who receive appointments from unemployed pay and subsequently vacate them through sickness, were to be entitled to commence a fresh period of unemployed pay only if they had actually served in the appointment for more than three months (91 days), the termination of the appointment for this purpose being taken as the date of last ceasing duty. On the same day it was notified that the special rates of retired pay laid down in the retrenchment order of 12th May, 1922, will not be subject to variation in 1924, or subsequently, in those cases in which the officers are eligible to commute the whole of their retired pay (lieutenants, ex-cadet; paymaster-lieutenants, ex-paymaster cadet (assistant clerk); junior officers, R.M., other than those promoted from the ranks).

DUNKIRK WAR MEMORIAL.—On 25th July the Duke of York laid the foundation stone of the British War Memorial Buildings in Dunkirk, built out of a fund of £30,000 raised, with the assistance of the Missions to Seamen, by the War Memorial Committee. His Royal Highness crossed from Dover in the destroyer "Versatile," accompanied by Admiral Sir Hugh Evan-Thomas, Commander-in-Chief at the Nore, and his Chief of Staff, Captain Wilfred Tomkinson, and escorted by the destroyer "Stork," Lieutenant-Commander R. E. M. Harris.

"RENOWN" PAID OFF.—On 28th July, the battle-cruiser "Renown" was paid off after returning from her tour with the Prince of Wales, at whose request her crew were granted 21 days' leave instead of 12. Captain the Hon. Herbert Meade, D.S.O., relinquished command of the ship, which was recommissioned next day by Commander the Hon. E. R. Drummond, formerly executive officer, for service in reserve at Portsmouth.

COMMANDERS' TECHNICAL COURSES.—On 28th July an indication of the reduction which is being made in the numbers of captains and commanders in the Royal Navy was afforded by a new order abolishing the technical course for commanders. In publishing the programme approved for the next senior officers' technical course, to which only captains had hitherto been appointed, the Admiralty stated that these courses are intended primarily for captains, but applications from commanders will also be considered. The courses for commanders will no longer be conducted separately.

WEARING OF AIGUILETTES.—On 28th July the Admiralty ordered that the aiguilettes of Admirals of the Fleet, Vice-Admirals and Rear-Admirals of the United Kingdom, Aides-de-Camp, and Honorary Physicians and Surgeons to the King, also Naval Equerries to the King or to Members of the Royal Family, were to be worn on the right shoulder with full and other dresses (jacket and blue undress coat excepted) when in attendance on or *in the presence of* the Sovereign or Members of the Royal Family. When not in attendance on, or in the presence of, the Sovereign or Members of the Royal Family, they are to be worn with dresses which include epaulettes, under the conditions formerly laid down in the Regulations.

AIR BOMBING TESTS.—On August 1st, off the Isle of Wight, an exhibition of the Royal Air Force at target practice at sea was given before the foreign Naval Attachés and representatives of the Press, who were on board H.M.S. "Canterbury." The old battleship "Agamemnon" was used as a target, and after steam was got up in her the crew was withdrawn, her movements being controlled by wireless

from the destroyer "Truant," 3,000 yards astern. Captain Guest, Air Minister, and Rear-Admiral Sir Alfred Chatfield, Assistant Chief of the Naval Staff, were in the destroyer "Winchester," and Air-Commodore Brooke-Popham witnessed operations from a flying boat. Aircraft were massed at Gosport for the test, and five "runs" were made by attacking planes of different types. The object was to demonstrate the ability of the airmen to hit a moving target on the sea. Only dummy bombs were used, fitted with a chemical which gave off a heavy white smoke on impact. An attack with machine guns was also made, presumed to be against the exposed *personnel* on the decks of enemy light craft. The target was not an effective fighting ship, able to reply to attack, and no defending planes were in the air, but the trials revealed a high standard of skill and marksmanship on the part of the airmen.

NEW SEAPLANE DOCK.—At the beginning of August the seaplane dock built at Sheerness Dockyard for the Air Ministry was transferred to the Royal Air Force on completion, and allotted for service in connection with the Isle of Grain Air Station. The dock, on which the R.A.F. flag was hoisted at the flagstaff, is able to take two modern seaplanes at one time, and has workshop machinery for refitting them. There is also a large storage tank from which petrol can be supplied to the seaplanes.

MEN-OF-WAR SCRAPPED.—The Admiralty ordered, early in August, that all the 13·5-in. guns and mountings of the battleships "Monarch," "Erin," "Conqueror" and "Orion," and the battle-cruisers "Lion" and "Princess Royal," were to be mutilated on board and sold with the ships. These vessels were the last of the twenty British capital ships to be scrapped during 1922 under the terms of the Washington Treaty, of which nine had already been disposed of early in the year. The six mentioned all served at the Battle of Jutland.

"INDUS" CLOSED.—In consequence of the decision to economise by concentrating the instruction of artificer apprentices in one establishment, instead of two, on August 9th, 218 instructors and apprentices from the "Indus," Captain T. J. S. Lyne, D.S.O., at Devonport were transferred to the "Fisgard," Captain C. P. Beaty-Pownall, C.M.G., at Portsmouth. On August 15th the "Indus" was paid off. The merging of the two establishments brought the number of artificers in the "Fisgard" to 850.

AN EARLY SEAGOING IRONCLAD.—On the withdrawal of the "Indus," her moorings at Devonport were occupied by the "Impregnable" boys' training establishment, and one of the vessels of the "Indus" command was ordered to replace the "Impregnable III." Originally the "Black Prince," completed in September, 1862, the latter was, with the "Warrior" (now "Vernon III."), one of the first two British seagoing ironclads. She first served in the Channel Squadron and in 1878 was commanded by Captain H.R.H. the Duke of Edinburgh in the squadron which occupied Cyprus under Admiral Lord John Hay. In 1900 she was appropriated for training duties at Queenstown as the "Emerald," and in 1910 was allocated as one of the "Indus" hulks.

PERISCOPE SCHOOL CHANGE.—In August the sloop "Lily," then on the disposal list at Portsmouth, was ordered to be commissioned for duty with the Periscope School at Portland, in place of the "Vulcan II." formerly the gunboat "Onyx," which was to be paid off for sale. The "Lily," belonging to the second group of twelve minesweeping sloops in the war emergency programmes, was completed by Messrs. Barclay, Curle, and Co., in August, 1915.

THE NAVY AT BISLEY.—At the National Rifle Association meeting at Bisley from July 10th to 22nd, marking parties were again furnished by the Royal Navy. The Admiralty officially announced that the Chairman and Council of the National Rifle Association wish to express their great appreciation of the manner in which all officers and men of the Royal Navy carried out their duties in connection with the meeting. The success of this event, the Chairman and Council consider, was largely due to the assistance they received from the Royal Navy.

LOSS OF THE "RALEIGH."—On the afternoon of August 8th, the light cruiser "Raleigh," Captain Arthur Bromley, C.M.G., flagship of Admiral Sir William Pakenham, K.C.B., K.C.M.G., K.C.V.O., went aground a quarter of a mile west of Point Amour, on the Labrador coast, and became a total wreck. The Commander-in-Chief was not on board at the time, having transferred his flag to the "Calcutta" on August 3rd to visit Chateau Bay and other places. He was to have returned to the "Raleigh" on the 12th. The first official announcement by the Admiralty stated that the crew had been landed, and that it was feared four lives had been lost. On the night of the 11th, however, the names were issued of ten men missing and presumed to have lost their lives. On the return of 550 of the survivors of the "Raleigh" to Liverpool on August 19th, in the steamship "Montrose," it was learnt that the casualties occurred among volunteers to man the lifeboat and tow a rope ashore. Lieutenant H. G. Hopper, in charge of the boat, alone managed to reach the shore owing to the heavy seas, and he secured a life line, with the aid of which the crew were taken off. For nearly three days they had to remain on the lonely rocks without food or shelter, the coast in this region being uninhabited. On the 10th, the "Calcutta" and "Capetown" arrived and rescued them, the crews of these ships going on half rations to provide the necessary food. On receipt of news of the mishap, the salvage-ship "Strathcona" left Quebec, and the Canadian Government offered the services of the destroyers "Patriot" and "Patrician" if needed. The United States Navy Department also offered any assistance required, stating that a division of battleships was then at Halifax and seagoing tugs available at Boston and Newport. Admiral Pakenham, in reply, expressed "Most cordial thanks for your welcome sympathy. I am happy to say" (he added) "that the help so graciously offered is not required, as the *personnel* landed safely. The British Navy will very greatly appreciate this new evidence that the comradeship of the War has not been forgotten."

HEALTH OF THE NAVY.—The statistical Report of the Health of the Navy for the year 1915 was issued in August by the Stationery Office. Unlike pre-War issues, this Report does not contain any essays by naval medical officers upon special aspects or problems of their profession, but the information given is valuable as showing the influence of the War upon the health of our seamen. Although the average strength of the *personnel* during the year was so much larger, the total number of cases of disease and injury showed a decrease of 5·72 per 1,000 in comparison with the average ratio for the previous five years. The average number of men sick daily was 5,289·63, or 22·36 per 1,000, showing a decrease of 2·10 as compared with the previous five years.

FLAGS OF FLEET AUXILIARIES.—An Admiralty order of August 11th directed that all Royal Fleet auxiliaries, naval armament vessels, yard craft, and other vessels employed in the service of the Admiralty and not commissioned as H.M. ships of war, were to fly the jack, defaced by the Admiralty badge. The special ensign hitherto used by naval armament vessels will cease to be used when the existing stock of the flag is consumed.

THE NAVAL PRIZE FUND.—On August 19th the Admiralty announced that claims in connection with the final distribution of naval prize money could be received from officers and men whose surnames began with the letters "O" and "W," in addition to those already in payment, beginning with "D," "H," "I," "J," "K," "N," "Q," "R," "V," "X," "Y," and "Z." On September 2nd it was further announced that the letters "C" and "U" had been admitted to payment.

MIDSHIPMEN AND ENGINEERING.—Since August, it has been no longer necessary for midshipmen to obtain the certificate of qualification in engine-room duties formerly required. Before promotion to acting sub-lieutenant, however, each officer will be required to obtain a mean award of 50 per cent. in the record of efficiency in engineering, and a certificate from the engineer officer that he has made satisfactory progress in the subject.

HASLAR NAVAL MEMORIAL.—On 17th August the Medical Director-General, Surgeon Vice-Admiral Sir Robert Hill, K.C.B., K.C.M.G., C.V.O., unveiled at the entrance to Haslar Hospital a memorial tablet "In honoured memory of the Medical Officers and Nursing Staff who were killed or died on service in the Great War." The tablet contains the names of those who fell, with the date of death and ship engaged. Similar tablets are being placed in the Naval Hospitals at Chatham and Plymouth.

R.N.V.R. DRILLSHIP.—On 21st August, ex-monitor "M. 23" arrived at Leith in readiness to take up her new duties as drillship for the Royal Naval Volunteer Reserve. Built in 1915 by Messrs. Raylton, Dixon, and Co., at Middlesbrough, she has been converted for drill purposes at Sheerness Dockyard at an estimated cost of £24,255. As from 1st October, 1922, the Clyde Division R.N.V.R. was renamed the Scottish Division.

LORD LEE'S TOUR.—In August, Lord Lee, the First Lord, began a tour of ports and bases in the Mediterranean. It was officially announced on 8th September that he had returned to London from a visit of inspection to the Mediterranean Fleet in Turkish waters and had resumed his duties at the Admiralty. While at Constantinople he took the opportunity of conferring with the British High Commissioner and with General Sir Charles Harington, the Commander-in-Chief of the Allied Military Forces, and accompanied the latter in his inspection of the Chatalja Lines. On his return journey, in H.M. sloop "Bryony," Lord Lee stopped at Gallipoli to visit the British cemeteries now approaching completion, and was greatly impressed by the admirable work which is being accomplished by the Imperial War Graves Commission. The remainder of the First Lord's tour of inspection had to be abandoned owing to a severe attack of gastro-enteric fever and he proceeded, in the "Bryony," to Venice, whence he returned overland to London as soon as he was fit enough to travel.

MOTOR LAUNCH BURNT.—On the night of August 28th, motor launch No. 196, commanded by Lieutenant J. E. P. Brass, stationed in the Danube, caught fire at Bratislava. Repeated explosions of machine gun ammunition hampered the work of the salvage parties, and when the flames reached the bow a final explosion caused the vessel to capsize, and, breaking her hawser, she drifted downstream. No casualties were reported. The river gunboat "Glowworm," which was in company, proceeded to Vienna according to programme, arriving on the 29th.

SHIPS FOR BREAKING UP.—At the end of August the battle-cruiser "Indomitable," which served in the Grand Fleet all through the War, and in which King

George made his voyage to and from Quebec in 1908, was towed away from Sheerness to be demolished by the Stanley Shipbreaking Company at Dover. The cruisers "Berwick" and "Suffolk" were also removed from Plymouth at this time for breaking up.

"Curacoa's" Visit to Spain.—On 3rd September, the light cruiser "Curacoa," flagship of Rear-Admiral W. S. Nicholson, C.B., left Portland for Guetaria, the birthplace on the north coast of Spain of Sebastian del Cano, to celebrate the 400th anniversary of the completion by that navigator of the first voyage round the world. The battleship "Paris" represented the French Navy at the fêtes organised in honour of the occasion. On her return journey, the "Curacoa" was to have visited St. Aubin Bay, Jersey, from 13th to 16th September, but was ordered instead to the Mediterranean.

Lodging Allowance Taxed.—By an order dated 1st September, the Admiralty notified that for the financial year 1922-23 officers and men of the Royal Navy and Royal Marines who were in receipt of lodging allowance, and who held appointments for a fixed or a practically fixed term, were to be subject to tax in respect of the allowance. For the purposes of the new order, any appointment in which lodging allowance is drawn continuously for a period in excess of 91 days is to be regarded as held for a fixed term, any appointment in which the allowance is drawn for a lesser period being regarded as temporary. Income-tax will not, however, be charged on the lodging allowance of officers undergoing the Senior Officers' War Course and the Secretaries' Course, which normally exceed 91 days, in view of the greater liability in their cases of being appointed elsewhere without notice.

Ostend Memorial Unveiled.—On 3rd September, the War Memorial at Ostend to the Allied sailors, soldiers and civilians who fell in the struggle was unveiled. The destroyer "Stork," Lieutenant-Commander R. E. M. Harris, of the Nore Reserve, was present to represent the British Navy, and conveyed Captain Wilfred Tomkinson, C.B., M.V.O., Chief of Staff in the Nore Command; Commanders T. Bodley Scott, King's Harbour Master at Dover, and W. E. Cornabé, of the Navigation Branch (representing the Admiralty).

Rio Centenary Celebration.—On 3rd September the battle-cruisers "Hood" and "Repulse" arrived at Rio de Janeiro, under the command of Rear-Admiral Sir Walter Cowan, to take part in the centenary celebration of the declaration of Brazilian Independence. In the British Pavilion at the Exhibition an effort was made to represent the maritime greatness of the Empire. The panels in the central hall illustrated the spirit of Kipling's "Seven Seas," and in the centre of the floor was a sunken space containing a relief map of the world set in water, whereon, under illumination, model ships were seen plying on the trade routes between the different parts of the Empire and Rio de Janeiro. The Pavilion was the only foreign building commanding a view of the sea, and over the entrance to the Bay pointed the 18-in. naval gun formerly in the Imperial War Museum at the Crystal Palace, and the 32-pounders used in the "Dom Pedro," Lord Cochrane's Brazilian flagship, in 1822. Working parties from the "Hood" and "Repulse" lent valuable aid in completing the British exhibit.

Royal Yacht for Sale.—On 11th September the Admiralty advertised for immediate sale the royal yacht "Alexandra," at Portsmouth. The vessel had been paid off earlier in the year on grounds of economy. A description of her stated that practically all furniture and fittings on board would be included in the sale. The yacht was offered for disposal without restrictions as to sale abroad, except that she was not to be sold to ex-enemy nationals.

OBSOLETE CRUISER WRECKED.—On 11th September the obsolete cruiser "Euryalus" was towed away from Plymouth by two German tugs to be broken up at Kiel. A Hamburg message on the 22nd reported her to have lost her anchor in the North Sea and to be ashore near Brunsbüttelkoog. Tugs failed to refloat her, and she was expected to become a wreck.

H.M.S. "SPEEDY" LOST.—On 24th September the Admiralty announced that the destroyer "Speedy," Commander Ralph W. Wilkinson, had been reported sunk after collision with a tug in the Sea of Marmora. Ten lives were reported lost, Other information was to the effect that the collision occurred with a Dutch vessel, and the destroyer foundered in seven minutes.

FOREIGN NAVIES.

BRAZIL.

CONTRACT WITH AMERICA.—In July the Brazilian Government decided to make a contract with the United States for the reorganisation of the Brazilian Navy. It was reported that the Americans would have a virtual monopoly of furnishing all naval stores and materials to Brazil similar to that enjoyed by France for military equipment. Captain Carl T. Vogelgesang, U.S.N., Commandant of the New York Navy Yard, was mentioned as the head of the American Commission of reorganisation.

DENMARK.

TRAINING SHIP'S CRUISE.—On the cruise of the Danish training ship "Heimdal" to England, mentioned last quarter, Prince Knud, second son of the King and Queen of Denmark, was taken seriously ill, and was sent to the Royal Naval sick quarters at Dartmouth when the vessel arrived there. The Queen of Denmark came to visit him there, and stayed until the Prince was able to rejoin the ship on August 1st to return to Copenhagen. On the previous evening a dance was given by the Mayoress of Dartmouth to the ship's officers, which the Queen of Denmark attended.

FRANCE.

BATTLESHIP LOST.—The battleship "France" struck a rock at the entrance to Quiberon Bay on the night of 25th August and foundered three hours later. The crew were saved, except for one stoker, probably drowned by the flooding of the engine-room. When the vessel grounded, said *The Times* correspondent at Paris in reporting the loss, a terrible rent was made in the hull; the ship was moving at a speed of about twelve knots at the time. The inrush of water flooded the engine-rooms almost immediately, putting out the fires. The dynamos stopped working, and all the lights went out. Captain Victor Guy, who was in command, hoped at first to save his ship, but it soon became evident that she was doomed. Signals for help were made to the other vessels of the squadron, and the crew, who had all along behaved with admirable discipline, were taken off and put on board the battleship "Paris" and the cruisers "Strasbourg" and "Metz." Hardly had the last man left the ship when she sank, turning over on her side in about ten fathoms of water at the foot of the Basse-Nouvelle reef. Launched in 1912 and completed in 1916, the "France" was of 23,500 metric tons, and was one of the ten capital ships allowed to be retained by the French Navy under the Washington Treaty. Prior to the mishap the Mediterranean Squadron, commanded by Vice-Admiral Salaun, to which the ship belonged, had been for some weeks carrying

out exercises and firing practice off Quiberon. Early in September a new map of Quiberon Bay, showing the position of the submerged rock on which the "France" struck, was issued by the Ministry of Marine.

FLYING SQUADRON'S CRUISE.—It was announced in July that a Flying Squadron composed of the cruisers "Victor Hugo" and "Jules Ferry" would leave in October under Rear-Admiral Gilly for a nine months' commercial cruise to the Far East, including Australasian and Indian ports. Representatives of various Government departments concerned with the organisation of the great ports and with the development of French trade were to accompany the Squadron.

"LIBERTÉ" TO BE RAISED.—The French battleship "Liberté," which sank in Toulon Harbour in September, 1911, owing, it is said, to the combustion of a cartridge in the bow magazine, all her officers and crew being killed, is at last to be raised, said the Paris correspondent of the *Daily Mail* on 30th August The hull, which lies in five fathoms of water, has been a source of danger to vessels entering or leaving the harbour. The hole torn in the side of the "Liberté" by the explosion has been repaired, and as the cruiser is pumped full of compressed air, it is possible to walk about her hold. The cruiser is still held tight by the bank of mud in which she lies, but airtight caissons are being fastened to the hulk, and these will be filled with compressed air. It is thought that in a month's time the hull will be towed into Toulon Harbour to be broken up.

GERMANY.

BALTIC MINES GONE.—A Berlin message dated 22nd August announced that the Commander of the German Naval Forces in the Baltic had reported the mine-sweeping operations in that sea to have been completed. The clearing of the Baltic of mines was an obligation laid on Germany by the Treaty of Versailles.

NAVAL MANŒUVRES.—In August, the active squadron of the German Navy began an exercise cruise in the Baltic. Previously, the battleship "Braunschweig" had visited the Scandinavian waters; the battleship "Hannover," the Swedish ports of Malmö and Mölle; and the light cruisers "Medusa," "Thetis," "Hamburg" and "Arcona," Gefle, Udevalla, Abo and Odde. On 5th September, President Ebert embarked on board the flagship "Braunschweig" from a cruiser which had conveyed him from Kiel, and remained in the vessel until the 7th. Before leaving, he addressed a wireless message of congratulation to the officers and men of the Fleet expressing the hope that the Navy would co-operate in the building up of the Republic.

GREECE.

BLACK SEA OPERATIONS.—On 30th July it was announced that the British Government had despatched a Note to Moscow in reply to a protest from the Soviet Government against operations of the Greek Fleet in the Black Sea and the Straits. In answer the Foreign Office intimated that the Russian protest is a matter for surprise. The Note records the fact that the Allied Governments at Genoa invited Russia to co-operate in establishing peace in the Near East. This pre-supposed a state of war as existing between Greece and Angora, and belligerent naval operations such as blockades, and the destruction of enemy stocks of munitions were therefore perfectly legitimate. With reference to the passage of Hellenic warships through the Straits, the pre-War arrangements regarding the neutrality of the Straits were terminated by the passage of the "Goeben" and the "Breslau" in 1914, and the Greek Government is perfectly entitled to send ships through the Straits into the Black Sea.

ITALY.

VISIT TO BRITISH PORTS.—On 1st August, the Italian cruiser "Francesco Ferruccio" and destroyer "San Martino," on an instructional cruise with cadets, arrived at Portsmouth for a stay of five days. King George happened to be yachting in the Solent as the vessels passed through that waterway, and they "manned ship" and fired a royal salute. The cruiser was commanded by Capitano di Vascello Giuseppe Cantu, with Capitano di Corvetta Alfreddo Crispi as second-in-command; and the destroyer by Capitano di Corvetta Manfredi Gravina. The vessels afterwards proceeded to Rosyth. On board the cruiser was the Prince of Piemonte.

NAVY ECONOMIES.—On 24th August, it was announced that the Ministers for the Treasury and the Navy had agreed upon certain important economies in the Navy Estimates. Administrative expenses were to be cut down and the construction of several auxiliary vessels suspended. Certain units were also to be laid up, and the *personnel* reduced by 40,000 men.

JAPAN.

CRUISER SUNK.—On 26th August, the cruiser "Nitaka" sank in a typhoon off the Kamchatka (Siberia) coast, with practically all hands, numbering 300. The vessel was laid down in 1900 and launched in 1904, and had a displacement of 3,420 tons. A message of condolence was sent by the First Lord of the Admiralty to the Japanese Minister of Marine, Admiral Baron Kato, who acknowledged it on behalf of the Japanese Navy.

AIRSHIP WRECKED.—On 10th July, a naval airship which arrived in Japan from England in April, exploded at Yokosuka, and became a total wreck, the hanger in which it was housed being also destroyed. There were no casualties.

NAVAL ECONOMIES.—In July, the Navy Department announced that the naval bases at Port Arthur and also at Takeshiki (Tsushima Island) and Yeiko (Korea) were to be closed down, in accordance with the policy of naval retrenchment. The bases at Maidzuru (or Maizuru) on the Gulf of Wakasa, and Chinkai (Korea) were ordered to be reduced to second-class naval bases.

TWO NEW CRUISERS.—On 19th August it was announced from Tokio that two new cruisers of 7,500 tons were to be laid down shortly in Japanese yards, to be named the "Kinugasa" and the "Furutori." These were understood to be the first units of the revised construction programme, which authorises the building of eight such vessels, four of 7,500 and four of 10,000 tons.

UNITED STATES.

APPOINTMENTS.—In the first week of August, Vice-Admiral Andrew Long hoisted his flag on board the battleship "Utah" at Gravesend as Commander of the American Naval Forces in European waters. Rear-Admiral G. W. Williams was appointed to succeed him as from August 10th as Chief of Staff in the Atlantic Fleet.

MISSION TO BRAZIL.—The Commander-in-Chief of the Atlantic Fleet, Admiral Hilary P. Jones, was selected as Navy representative on the American Commission to attend the Brazilian Centenary celebration in September. Headed by Mr. Hughes, Secretary of State, the Commission left on 20th August, on board the

battleship "Maryland," while the battleship "Nevada" carried a Marine detachment and the Government exhibit. It was decided that after the Centenary, the "Maryland" would leave Rio de Janeiro and join the Atlantic Fleet until the joint manœuvres at the Panama Canal in January, when she will be transferred to the Pacific Fleet. The "Nevada" was to remain at Rio until November 15th, after which she will proceed to join the Pacific Fleet.

RECRUITING.—According to a circular letter from the Bureau of Navigation, said the *Army and Navy Journal* of 19th August, commanding officers were called upon to do everything possible to reduce the number of discharges other than for termination of enlistment. There will have to be enlisted in the Navy during the fiscal year 1922-23, it was added, in order to maintain the enlisted strength of 86,000, about 38,000 first enlistments, estimating the re-enlistments at 20,000.

U.S. NAVAL RESERVE.—At a conference between Mr. Roosevelt, Acting Secretary of the Navy, and representatives of the United States Naval Reserve, the strength of this force was tentatively fixed at 1,500 officers and five thousand men. The Naval Appropriation Bill set apart $3,000,000 for maintenance and training, of which $200,000 is needed for rent and other expenses in connection with armouries and offices. The conference was held to consider the expenditure of the remaining $2,800,000, and after a discussion of the costs of the fortnight's training period it was decided that there would probably be sufficient funds to place the numbers of officers and men stated upon the retainer pay basis. The corresponding numbers in the British Royal Naval Reserve are 2,500 officers and about eight thousand men.

MILITARY NOTES.

ARMY HEADQUARTERS STAFF.

On 11th September last the changes in the Army Council were completed by the transference of Lieut.-General Sir Philip Chetwode, Bart., K.C.B., K.C.M.G., D.S.O., from Deputy Chief of the Imperial General Staff to be Adjutant-General to the Forces in succession to Major-General Sir William Thwaites, K.C.M.G., C.B., and the Department of the Chief of the Imperial General Staff was reconstituted by the appointment of Major-General Burnett Stuart to be Director of Military Operations, in which directorate he was at one time a Staff Captain. The Directorships of Military Training and of Staff Duties were previously filled by the appointment of Major-Generals Gathorne Hardy and Romer to these posts respectively. On vacating the post of Deputy Chief of the Imperial General Staff, Sir Philip Chetwode will not have a successor, as the appointment, being a War one, lapses.

BATTLE HONOURS.

Battle Honours under A.O. 338, *etc., 4th September,* 1922.—1. His Majesty the King has been graciously pleased to approve of the award of battle honours to regiments and corps under the following conditions:—

(*a*) Regiments and corps will have awarded to them, and recorded in the Army List, in addition to those already shown, the honours due to them for taking part in the battles enumerated in columns headed (1) "Operations" and (2) "Battles" ("Name" and "Tactical Incidents Included") of the tabulated list of engagements given in the report of the Battles Nomenclature Committee.

(*b*) Following the honours previously earned and at the head of the List of Honours granted for the Great War to be recorded in the Army List will be placed "The Great War," and the number of the battalions of the regiment taking part, *e.g.*—

THE DEVONSHIRE REGIMENT.

"THE GREAT WAR"—10 BATTALIONS, MONS, MARNE, AISNE, ETC.

(*c*) Within the meaning of regiments and corps will be included Cavalry and Yeomanry regiments. An infantry regiment or corps will include the Regular, Militia (or Special Reserve), Territorial and Service battalions of the regiment concerned. There will be only one Honours List for a regiment or corps.

(*d*) Regiments of Cavalry and Yeomanry, battalions of Infantry, Regular Militia (Special Reserve), and Territorial, will have emblazoned on their Standards, Guidons and Colours not more than 24 honours, of which not more than 10 will be "Great War" honours, to embrace the whole history of the regiment concerned from the date on which it was raised to the end of the Great War, such honours to be selected by Regimental Committees from the List of Honours to be shown n the Army List. The honours emblazoned on the Colours will be the same for all units comprising the regiment concerned, and will be shown in the Army List in thicker type.

(*e*) The guiding principle in the selection and allotment of battle honours will be that Headquarters and at least 50 per cent. of the effective strength of a unit in a theatre of war (exclusive of drafts which, although in a theatre of war, had not actually joined the unit) must have been present at the engagement for which the honour is claimed.

(*f*) Regimental Committees under the chairmanship of their regimental colonels, or of representatives to be nominated by the regimental colonels, will be set up to select the particular honours for Regimental Colours.

2. Detailed instructions have been issued to the colonels of regiments and corps concerning the preparation and submission of claims for the award of battle honours.

ARMY COUNCIL INSTRUCTION 458 OF 1922.

Award of Battle Honours to Regiments and Corps for services in the Great War.

1. With reference to A.O. 338 of 1922, the following instructions are issued concerning the submission of claims for Battle Honours.

2. If regiments or corps wish to select a Battle Honour from the column under the heading of "Actions, etc.," in the Report of the Battles Nomenclature Committee, they may do so under the following conditions:—

(*a*) A separate application must be made for such a claim, giving full reasons for wishing to depart from the normal procedure.

(*b*) Such claim will be a case of substitution, *i.e.*, any honour selected from this column will necessitate the abandonment of a claim to the same honour under the headings of columns 1 and 2.

(*c*) Each claim so made will be considered on its merits.

3. If regiments or corps wish to claim an honour for an engagement in the Great War not mentioned in the Report of the Battles Nomenclature Committee they must make a separate application for it, giving full reasons why it is desired. Claims in this category should be made only in cases where the action of a unit has been of such merit as to form the subject of a Special Order of the Day by a British Commander-in-Chief in the Field.

4. A Battle Honour must be claimed only from one column of the Report of the Battles Nomenclature Committee, *e.g.*, if an honour is claimed from the column under the heading of "Tactical Incidents Included," the same honour cannot be claimed under the heading of the other columns.

5. Territorial units which do not form an integral part of, as distinct from affiliation to, a Regular regiment or corps as shown in the Army List will be treated as separate regiments or corps for the purpose of the award of Battle Honours.

6. Regimental committees, to which a representative of every battalion, whether still existing or not, must be invited, will be convened by the colonels of regiments and corps to prepare lists of Battle Honours as claimed by the regiment or corps as a whole, for the purpose of printing in the Army List, and further lists showing the honours selected for emblazoning on the Colours, Standards and Guidons. It must be understood that in many cases a reduction of the honours at present emblazoned on the Colours will be necessitated.

7. Great care will be necessary in the preparation of the lists referred to in paragraph 6, and a certificate must be forwarded with claims, signed by the chairman of the committee, stating that the committee have examined all war diaries relating to the honours claimed.

8. Arrangements have been made with the Director, Historical Section (Military Branch), Committee of Imperial Defence, for the officer i/c records of the regiment or corps concerned to place at the disposal of the chairman of the committee, on written application being made, the duplicate war diaries of the regiment or corps. It is to be understood that this is for the express purpose only of substantiating claims to the award of Battle Honours, and that the war diaries are to be returned by the chairman to the officer i/c records immediately the necessary investigations have been made.

9. Lists of Battle Honours claimed are to be forwarded, in triplicate, on the required forms, to :—

The Secretary,
The War Office (A.G. 10),
27, Pilgrim Street,
London, E.C.4.

Supplies of the necessary forms have been forwarded to colonels of regiments and corps.

10. No reimbursement from public funds can be made for any expenses incurred through the formation of regimental committees, or the compilation of the necessary returns.

3/Gen. No./209 (A.G. 10).

Abolition of Acting Rank.

A new Army Order provides that the grant of acting rank to officers of all arms, except the Royal Army Ordnance Corps, will cease forthwith.

The cases of all officers now holding acting rank will be reviewed, and wherever possible recommendations for relinquishment will be submitted to the Secretary, The War Office, G.O.s, C.-in-C., Commands, will forward to the Secretary, the War Office, the names of all officers holding acting rank where relinquishment is recommended. The officers concerned will be informed that the relinquishment, if approved, will be carried out in an early edition of the *London Gazette*. Only in very exceptional circumstances will the retention of acting rank be permitted.

All such cases will be submitted to the War Office for decision, with full details showing the necessity for retention. Acting rank will continue to be granted in the Royal Army Ordnance Corps under the present conditions until an establishment is fixed for that Corps.

The grant of temporary rank is not affected by this Order.

Promotion from the Ranks.

Revised regulations governing promotion from the ranks to Combatant Commissions as Second Lieutenants are issued in an Army Order (254 of 1922). It is stated that for the present candidates from the ranks will be granted commissions only in the Cavalry, Infantry, and Royal Army Service Corps of the British Service, and in the Indian Army.

The regulations provide that a candidate must be a British subject, the son of British subjects, and of pure European descent, and that he will be required to undergo a special course of training of about one year's duration at the Royal Military College, Sandhurst, and to obtain a satisfactory report therefrom. The first course will commence on September 1st, 1922; the second course in January, 1924, and subsequent courses in January of each year. The maximum age of candidates for the first two courses will be 24 years; after January, 1924, candidates must be under 22 on January 1st of the year in which they are recommended. The possession of a first class Army Certificate of Education, or a Special Army Certificate of Education, will be regarded as sufficient educational qualification up to January 1924; but subsequently candidates must possess a Special Army Certificate of Education, unless they have qualified for admission to the Royal Military Academy, Woolwich, the Royal Military College, Sandhurst, or the Royal Air Force Cadet College; or passed the First Public Examination at the University of Oxford, or the equivalent examination at any other approved university, or were granted a commission in the Army from an officer cadet unit during the war of 1914–1919.

The course of training commencing in September next will provide for 35 candidates, but in subsequent years the number of places will vary according to the requirements of the Service.

Changes in Cavalry Designation.

It is officially announced that the King has been pleased to approve that the squadron of The Carabiniers (6th Dragoon Guards), now being amalgamated with the 3rd Dragoon Guards, shall be designated "The Carabinier Squadron, 3rd/6th Dragoon Guards, and that the squadron of The Inniskillings (6th Dragoons), now being amalgamated with the 5th Dragoon Guards, shall be designated "The Inniskilling Squadron, 5th/6th Dragoons."

Standards of Cavalry Regiments.

Instructions have now been issued as to standards and guidons and uniforms of amalgamated cavalry regiments (other than the Life Guards). Standards and guidons will be retained by the regiments concerned, and will be carried simultaneously on parade, the single squadron carrying its own standard or guidon. The existing regimental badges for all ranks of amalgamated regiments will be retained; and shoulder titles for other ranks will be altered to agree with the new designation of amalgamated regiments. For bands the full dress uniform will be that of the senior amalgamated regiment. The mess dress will be, for Dragoon Guards and Dragoons: scarlet jacket, blue facings, scarlet cloth waistcoats, and blue cloth overalls with 1¾-inch yellow cloth stripes; for Hussars and Lancers, blue jacket, blue facings, white cloth waistcoats, and blue cloth overalls, with two

¾-inch yellow cloth stripes. The mess dress of cavalry regiments not amalgamated will remain as at present.

Reorganisation of Artillery.

It is announced in Army Orders providing for the reorganisation of the Royal Field Artillery and the Royal Garrison Artillery that, as from 1st November, 1922, the 30th, 32nd, 33rd, 34th, 35th, 36th, and 37th Brigades R.F.A. will be re-numbered 7th, 16th, 22nd, 24th, 25th, 26th, and 28th respectively. The 132nd, 136th, 137th, 138th, 139th, 142nd, 143rd, 144th, 146th, and 148th Brigades R.F.A. will become 104th, 109th, 103rd, 106th, 107th, 105th, 112th, 110th, 111th, and 103th respectively; while the 23rd, 24th, 25th, 26th, 29th, 33rd, 34th, 37th, and 38th Medium Batteries R.G.A. will be re-numbered respectively as the 7th, 12th, 22nd, 9th, 21st, 6th, 2nd, 4th, and 8th Medium Batteries.

Royal Garrison Artillery.

No. 4 Depot R.G.A. has ceased to exist as a unit; the 9th (Medium) Brigade, R.G.A., Headquarters, and the 8th (Medium) Brigade, R.G.A., Headquarters have been disbanded; while the 32nd Medium Battery, R.G.A., has been absorbed by the 20th Medium Battery, R.G.A., and the 6th Medium Battery, R.G.A., by the 5th Medium Battery, R.G.A.

The 40th Medium Battery, R.G.A., has now been absorbed by the 29th Medium Battery, R.G.A., and the 7th Medium Brigade Headquarters, R.G.A., has been disbanded.

The 31st Medium Battery, Royal Garrison Artillery, has been absorbed by the 19th (H) Medium Battery, Royal Garrison Artillery, and the 9th Medium Battery by the 10th (H) Medium Battery.

Royal Irish Fusiliers.

Corps not to be Disbanded.—The King has approved the cancellation of the Order (Army Order 78 of 1922) for the disbandment of the Corps of the Royal Irish Fusiliers (Princess Victoria's). At the same time his Majesty has approved the amalgamation of the 1st and 2nd Battalions of this regiment.

The King has approved with great regret the disbandment, as soon as the exigencies of the service permit, of the 2nd Battalion the Royal Inniskilling Fusiliers.

Railway Concessions for all Ranks.

It is officially stated that the railway companies of Great Britain will grant, as from 1st October, special concessions to officers and other ranks proceeding on leave. Officers may obtain first-class return tickets from their station to London only, at the cost of an ordinary first-class single ticket, plus a third (minimum fare 5s.) Warrant officers, non-commissioned officers, and men travelling in uniform may obtain second or third-class return tickets from their station to their leave address at the cost of an ordinary single ticket, plus a third. The concessions granted are applicable between all stations in Great Britain and stations and ports in Great Britain and ports in Ireland via direct boat (including Belfast via Stranraer and Larne) except that, in the case of officers, they are applicable to journeys from the stations at which the officers are serving to London only. On the Metropolitan and Metropolitan District Companies' systems the concessions will only be effective for fares of one shilling or more.

In addition to officers and other ranks serving with the Regular Army, the following will be eligible for these concessions: Officers on the Active List seconded

as adjutants of Territorial Army Battalions; warrant officers, non-commissioned officers and men of the India Unattached List and of the Permanent Staff, T.A.; barrack wardens whilst receiving pay for active duty; and Ordnance Survey *personnel* other than civil employees. The concessions are not applicable to officers of the I.A. who are still on the regular reserve of officers, nor of civil medical practitioners employed on military duties.

Increments for Length of Service.

A new Army Order provides that the grant of all increments dependent on length of service will be subject to the soldier attaining a satisfactory standard of military efficiency. Such increments will be granted on completion of the required period of service unless the soldier's commanding officer certifies that a satisfactory standard of military efficiency has not been attained.

Previous Colour service in the Royal Navy, Army, Royal Marines, or Royal Air Force or active service with a Colonial Corps (except the South African Constabulary) will, if acknowledged on enlistment or re-enlistment, count for increments of pay in the rank of private or equivalent rank.

When once the increment has been granted the pay of the soldier cannot be reduced to the lower rate if he fails to maintain the standard of efficiency. In this respect increments of pay differ from proficiency pay.

Medical Corps for West Africa.

It is officially stated that a non-European Section of the Royal Army Medical Corps will be formed, for attachment to the West African Regiment. The rates of pay for other ranks serving in the new section will be: For a private, 1s. 6d. daily; lance-corporal, 1*s.* 9*d.*; corporal, 2*s.*

Soldiers' Employment Sheets.

The King's Regulations have been amended so as to make more provision for the maintenance of an employment sheet for every soldier of the Regular Army. The employment sheet is to form a history to show the capabilities and qualifications of a soldier for employment in civil life, but is not to refer to the soldier's military character, which is recorded in his conduct sheet.

The capabilities and qualifications of each soldier will be summed up and recorded on the employment sheet annually before 1st October, and whenever a soldier is transferred to another unit. This summary is to indicate the soldier's merits, and, if necessary, his defects, under such heads as industry, energy, cleanliness, trustworthiness, intelligence, initiative, self-reliance, capacity for continuous hard work, educational standard, etc. Special mention will be made of any trade or occupation which is likely to be of use to the soldier in civil life. After each summary is completed it will be read to the soldier, who, if dissatisfied, will be given an opportunity of appealing to his commanding officer. The opportunity thus offered will be used to warn a soldier who is deteriorating of the serious consequences which unfavourable entries will have on his prospects after leaving the Colours.

When a soldier is transferred to the Reserve or discharged his employment sheet will be forwarded, with his other documents, to the Officer i/c Records for retention.

Sport in the Army.

The Army Sport Control Board will in future be known as the "Army Sport Central Board," and the executive committee will consist of ten members appointed by the Army Council—viz., the chairman; one representative from each of the

following—the Department of the Chief of the Imperial General Staff, the Department of the Adjutant-General, the Department of the Quartermaster-General of the Ordnance, the Territorial Army Directorate, the Inspector of Physical Training, and three other selected members. In addition, three representatives, nominated by the executive committee of the Territorial Army Sport Board, will be asked to attend meetings of the Army Sport Central Board when questions affecting the Territorial Army are to be considered.

Territorial Army.

Staff Officers' Pay and Allowances.—It is officially stated that officers of the Militia or Territorial Army and retired officers who were appointed to the staff of the Territorial Army or as adjutants in that Army prior to April 5th, 1922, and were still serving on that date, will continue to receive the full pay and allowances of their appointments for the remainder of the term for which they were definitely appointed, unless their appointments are abolished earlier or for any other reasons they cease to hold their appointments.

In the case of the Deputy Assistant Director of Veterinary Services, the rates of £150 a year, in addition to bonus, will be continued.

Surplus Officers and the Colonies.

It is officially stated the Royal Colonial Institute is prepared to afford the fullest information to officers who may contemplate migration to, or engaging in enterprises in, any part of the British Empire after retirement.

AUSTRALIA.

The Inspector-General of the Military Forces says that with the framework now established a reduction of the peace strength from 118,000 to 30,000, all ranks, will still ensure an organised force for the defence of Australia, provided there is time after the outbreak of a war to train the rank and file.

It is essential, he says, that the six days' continuous training shall not be further reduced or again eliminated. He calls attention to the importance of a uniform railway gauge for the transport of troops. The Army Reserve now consists of forty-eight thousand men of war service, who have signified their desire to be enrolled as members. Regret is expressed that steps have not yet been taken to revive the exchange of British and Australian officers. The War Office is willing that there should be an exchange.

Royal Military College, Duntroon.

A new Army Order applies to cadets or candidates appointed to permanent regular commissions on passing out of the Royal Military College, Duntroon, Australia, the same rules as to ante-dating seniority where the candidate has served as an officer prior to admission to the College, as already obtain in the case of cadets or candidates of the Royal Military Academy, Woolwich, the Royal Military College, Sandhurst, and Universities, etc.

INDIA.

Cavalry Grouping.

Proposed new numbers and titles.—The Government of India have for some time past had under consideration the question of the permanent numbers and titles to be borne by the Indian cavalry regiments when reconstituted in accordance with the scheme already sanctioned for amalgamation and conversion to a non-silladar

(a soldier providing his own arms and horse) basis. It is thought that the interim arrangement of designating the amalgamated regiments by combining the previous numbers of the original parent units would be cumbersome, and that while such an arrangement might, with British cavalry, promote emulation, in the case of the Indian cavalry regiments it might tend to foster internal discord, might actually prevent fusion and so become inimical to efficiency.

In the spring of this year advantage was taken of the presence of a large cavalry gathering at Delhi to convene a representative committee of Indian cavalry officers for the purpose of considering renumbering schemes based on :—

(*a*) The Army List order of precedence.

(*b*) The order of seniority by dates of original raising.

(*c*) The new system of grouping units.

The committee was further instructed to consider the question of titles to be borne in the future.

Renumbering in accordance with (*a*) and (*b*) was found to be impracticable, since units had already been selected for amalgamation by reason of their historical association or class composition, and without reference to their seniority; and a renumbering on this basis would have necessitated the allotment to each amalgamated pair of units of the number hitherto borne by the senior regiment.

The main features of the grouping system recently adopted are as follows :— The twenty-one reconstituted regiments of Indian cavalry have been associated in seven groups, each comprising three units of identical class composition, and each group based on a certain locality which forms the permanent group centre. One regiment of the group will be normally located at this centre, while the other two may be stationed elsewhere. On mobilization the regiment at the group centre will train recruits and provide reinforcements.

The scheme now submitted by the Delhi Committee is the result of a considerable consensus of opinion, and it is believed that it has received approval and is about to be published.

It will be found below, and is complete, with the exception that the 31st and 32nd Lancers will continue to bear their present numbers and titles until their amalgamation has been effected :—

Group No.	Group Centre.	Present Nos.	Numbers and Titles proposed.
I.	Poona	1st-3rd	1st Duke of York's Own Skinner's Horse.
		2nd-4th	2nd Lancers (Gardner's Horse).
		5th-8th	3rd Cavalry.
		9th-10th	4th Duke of Cambridge's Own Hodson's Horse.
II.	Lahore	11th-12th	5th King Edward's Own Probyn's Horse.
		13th-16th	6th Duke of Connaught's Own Lancers.
III.	Bangalore	28th	7th Light Cavalry
		26th-30th	8th King George's Own Light Cavalry.
		20th-29th	9th Royal Deccan Horse.
V.	Rawal Pindi	Guides	10th Queen Victoria's Own Corps of Guides, Frontier Force.
		1st-23rd	11th Prince Albert Victor's Own Cavalry, Frontier Force.
		22nd-25th	12th Cavalry, Frontier Force.

Group No.	Group Centre.	Present Nos.	Numbers and Titles proposed.
V.	Jubbulpore	31st-32nd	13th Duke of Connaught's Own Bombay Lancers.
		35th-36th	14th Prince of Wales's Own Scinde Horse.
		17th-37th	15th Lancers.
VI.	Jhansi	27th	16th Light Cavalry.
		33rd-34th	17th Queen Victoria's Own Poona Horse.
		6th-7th	18th King Edward's Own Cavalry.
VII.	Delhi	18th-19th	19th King George's Own Lancers.
		14th-15th	20th Lancers.
		38th-39th	21st King George's Own Central India Horse.

Royal Engineers, Indian Army.

Transfer of Supplementary List, Royal Engineer Officers.—With the approval of the Secretary of State for India, it has been decided to transfer officers of the Royal Engineers (Supplementary List) transferred to the Indian Army on the following terms :—

Pay.—As for officers of similar rank employed in Military Works Services, Sappers and Miners, or Signals.

Promotion.—(*a*) To receive the substantive rank of captain, with seniority from the date they complete nine years' service, or from the date of their commission if on that date they had completed nine years' service or more. Half rank and all Warrant service to count for purposes of reckoning this service.

(*b*) Promotion to captain to count for pay from 24th January, 1922, or actual date if later.

(*c*) To receive substantive rank of Major nine years from date they receive the rank of Captain.

(*d*) To receive the substantive rank of Lieut-Colonel eight years after promotion to Major. Promotion to the rank of Major will be contingent on officers passing such examinations as may be prescribed. Pensions to be eligible for retiring and invalid pensions under Indian Army Rules in force from time to time.

The Field Army in India.

The new Indian Army Reserve of Officers will follow in its organisation the lines laid down for the British Service with suitable modifications. That is to say, there will be two categories, one being of ex-officers available on mobilisation, corresponding to the home Reserve, and one composed of those who are willing to be trained and made available in great emergency, corresponding to the home Territorial Reserve. There will also be two classes divided by age. The new Reserve will differ from the old one in that it will be a reservoir for the Field Army in India and not for the Indian Army alone. This is a distinct gain, and British units will not be dependent altogether on home supply on taking the field. It is hoped that there will be a General List, so that the many specialists and non-unit officers so essential to a modern Army may find a place in the new Reserve.

India General Service Medal.

It is officially stated that the India General Service Medal, 1908, with clasp "Waziristan, 1919-1921," will be granted to all officers and men of the Waziristan Force who served west of Kharkon Algad between 27th November, 1921, and 16th December, 1921, both dates inclusive. The same medal, with clasp "Mahsud, 1919-1920," will be granted to all officers and men who served under the orders of the General Officer Commanding, Waziristan Force, on the Takki Zam Line, north of and including Jandola, between 18th December, 1919, and 8th, April 1920 both dates inclusive.

The Prince of Wales's Royal Indian Military College at Dehra Dun.

Indian candidates for King's Commissions in the Indian Army are at present required to pass through the Royal Military College, Sandhurst. The Military College at Dehra Dun provides a public school education on English lines for Indian youths who desire subsequently to enter the Royal Military College, Sandhurst, with a view to obtaining commissions in the Indian Army. It is intended for those who wish to make the army their profession in life, and parents or guardians of candidates will be required to furnish a declaration to this effect. The course of study at the College will, however, be such that, should a boy fail in the examination for entrance to the Royal Military College, Sandhurst, he will be in as good a position to pass the University entrance examination as if he had been educated at an ordinary school.

The total number of students who can be in residence the first year is 40. Thereafter more will be admitted as accommodation becomes available. The limits of age for admission will be from 12 to 13.

The results of the first term's working appear to be satisfactory and the College is considered to have made a propitious start. The students have taken to their work with enthusiasm, and the training has greatly improved them already. The Medical reports show that the chest measurements of many of them have increased by as much as two inches as the result of the physical regimen of the College.

Indian Civil Service.

Opening for Surplus Army Officers.—The Secretary of State for India in Council announces that it has been decided, provided so many candidates are found suitable for appointment, to select for appointment to the Indian Civil Service under the Indian Civil Service (Temporary Provisions) Act, 1915, 16 Indian Army officers who come within the category of surplus officers as defined in the rules under the Royal Warrant of 25th April, 1922. Candidature for these appointments will not be confined to officers still serving, but is open to officers who have already been retired as surplus to requirements and to officers who have accepted employment in other civil departments, provided that they are otherwise eligible.

Rules for this purpose are being framed, and will be published as soon as possible. They will set forth the necessary qualifications as to age, military service, education, etc., and the conditions of appointment and probation.

Qualifying examinations will be held in London and in India. Candidates who are successful in India will be required to proceed to England for interview by a Selection Board.

Conditions of Appointment.—Officers whose retention in the Indian Army has been approved, and officers whose retention is still under consideration, will be permitted to apply for selection as probationers without prejudice to their retention in the Indian Army if rejected.

Selected candidates will retain the concessions in paragraphs 1, 2, and 3 of the retirement rules, except that leave pay will not be paid for any period in respect of which the selected candidate may be eligible for an allowance payable to him as a probationer in the United Kingdom previous to appointment to the Indian Civil Service, and that the passage concession will not apply if the period of probation is passed in India. The right to passage concession will revive if the probationer is not confirmed in the Indian Civil Service. Free passage to England will be granted for the purpose of interview with the Selection Board and free passage to India on appointment to the Indian Civil Service.

Probationers will be placed on the half-pay list without half-pay, but will be required to resign their commissions in the Indian Army on confirmation in the Indian Civil Service. In the case of Officers who have been retired under the Royal Warrant of 25th April, 1922, prior to submitting applications for the Indian Civil Service, payment of gratuity and the allowance under rules 7 and 8 of the retirement rules will be suspended, and on confirmation in the Indian Civil Service probationers will be required to repay any portion of the gratuity, but not of the allowance which they may have received.

Except in the case of officers of classes mentioned in paragraph 4 of this announcement, probationers who are not confirmed in the Indian Civil Service will be retired under the Royal Warrant, and will then be entitled to draw gratuity under rule 7 and allowance under rule 8 of the retirement rules. The time spent on probation will not count for reckoning the amount of the gratuity, and the right to draw it is limited by the proviso that the probationer will be subject to any penalties provided by the Indian Civil Service Regulations for probationers.

A further announcement will be published as soon as the rules for the selection of candidates have been finally approved by the Secretary of State in Council.

THE NEAR EAST.

As a result of the fighting which has been going on since early in 1920 in Asia Minor between the Greeks and the Kemalist troops, the Greeks, who were at first successful, were driven back in the month of August this year and occupied a strong position on the Baghdad railway line. This position was attacked by the Turks at daybreak on the 26th August in overpowering strength, the attack being directed against Afium Karahissar and Bilejik. The Greek force numbered about 27,000 men in five divisions under General Tricoupis, while the Turks, under Mustapha Kemal Pasha, numbered some 40,000 in ten divisions. The Greek army, as ordered, retired fighting, but their right wing was turned by Turkish cavalry, and the Greeks fell back in much disorder towards Smyrna.

On the 5th September it was reported that the Greek Government had decided there could be no question of maintaining any further defence in Asia Minor since the army was demoralised and must be withdrawn. On the 2nd September General Tricoupis had been captured by Turkish cavalry, and on the 8th September the Greeks began to evacuate Smyrna, which was entered next day by the Turkish cavalry.

The international situation now gave rise to some anxiety and it was decided to send British reinforcements to Constantinople. On the 9th September Lord Plumer left Malta for Constantinople, there to advise General Harington, commanding the British Corps of Occupation. On the 14th September the 2nd Battalion Royal Sussex and the Gordon Highlanders left Malta for Constantinople, and on the 20th the North Staffordshire Regiment left Gibraltar for the same destination. About the same date the 2nd Battalion Grenadier Guards sailed from England and on the 27th the 3rd Coldstream, 2nd Royal Fusiliers, and the

2nd Rifle Brigade also embarked. Several batteries, heavy, medium and pack, detachments of the Royal Flying Corps and the necessary departmental troops had also been dispatched to the danger zone. The British troops in Constantinople occupied the neutral area at Chanak on the Asia Minor coast and were there in very close touch with the Kemalist troops, who had crossed the neutral line of demarcation.

Early in October a conference of Allied generals was opened with the military representatives of Kemal Pasha at Mudania and a satisfactory agreement was finally signed on the night of the 11th.

JAPAN.

The Japanese War Department recently took the first step in the work of the reduction of the army with the disbandment of 400 officers from the rank of Lieutenant-General to Major and 56,000 men. By August, 1924, 2,200 officers will be discharged, with allowances equal to two years' pay.

RUSSIA.

THE ARMY.

Numerous Training Courses.—The efforts which the military leaders in Soviet Russia are making to cope with the much-discussed problem of securing efficient officers and non-commissioned officers for the Red Army are testified to by the large number of training courses being conducted in the Petrograd area alone. The walls in that city are covered with placards announcing a number of different "commanders courses" in the various arms. There are infantry commanders' courses at Petrograd, Peterhof, Kronstadt and Pskoff lasting a year; the Smolny course for infantry, machine-gun, cavalry, and artillery commanders, in the units under the orders of the Petrograd Executive Committee, lasting also a year; the heavy and coast artillery commanders' school, at Petrograd, a four years' course; the heavy artillery school at Kronstadt, an eighteen months' course; and the technical artillery school at Petrograd, a five years' course.

All candidates must show a recommendation either from the Communist party organisation or from two members of the party. Those who enter the infantry and cavalry commanders' schools must be able to read and write, and give an account of what they have read, and must know the four first rules of arithmetic; while the candidates for posts of command in the artillery must be equipped with a full elementary school education.

No Royal Air Force Notes have been received for this Number.

SOME FOREIGN NAVAL AND MILITARY PUBLICATIONS.

BELGIUM.

BULLETIN BELGE DES SCIENCES MILITAIRES.

August.—The operations of the Belgian Army (continued). Battle destroys the Army, the Army the Nation. What we have to fear from Germany (cont.). Liaison (cont.). The interior economy of a division (cont.). The problems of transport. The renaissance of military surgery. The German regulations on "Combined Training" (cont.). British methods of instruction of air-pilots.

September.—The operations of the Belgian Army (cont.). Battle destroys the Army, the Army the Nation. The lessons of the war in regard to the use of the counter-offensive. What we have to fear from Germany (cont.). Liaison (cont.). War Dogs. The British "Infantry Training." The German regulations on "Combined Training."

October.—The operations of the Belgian Army (cont.). The military operations in the Italian theatre of war. Field training: security against aircraft attacks. Bayonet fighting in the British Army. The interior economy of a division (cont.). Specialisation in war: the Lewis gunner. The German regulations on "Combined Training" (cont.).

FRANCE.

LES ARCHIVES DE LA GRANDE GUERRE.

April.—The truth about the loss of the Haut de Meuse and of St. Mihiel in September, 1914. Before St. Mihiel in 1915. The Psychology of the Italian G.H.Q. under General Cadorna. The Dictatorship of the Proletariat in Hungary (cont.).

May.—The military *débâcle* of Germany. The truth about the loss of the Haut de Meuse and of St. Mihiel, September, 1914. The Psychology of the Italian G.H.Q. under General Cadorna (concl.). Before St. Mihiel in 1915 (concl.).

REVUE MILITAIRE GÉNÉRALE.

July.—The cavalry and the 18 months' Colour service. The Austro-German offensive against Italy, Oct.–Nov., 1917, Part 2. The re-casting of our training methods and of our doctrine of war. The Russian soldier. Infantry fire tactics.

August.—Could we have gone on fighting in the autumn of 1918? The Austro-German offensive against Italy, Oct.–Nov., 1917, Part III. (concl.) The recasting of our training methods and of our doctrine of war (cont.). Infantry fire tactics (cont.).

NAVAL.

LA VIE MARITIME.

July.—A calumny against France—a comparison of her naval and military budget with that of the five Great Powers. Mediterranean problems. The Rhône and the Navy. Barge transport in relation to the development of sea-borne commerce.

August.—Not received.

September.—Thoughts on a wreck. Navy and Diplomacy. About Gliding. The Hamburg week and German propaganda. The present state of the Trans-Saharian question.

October.—The Eastern Crisis; the Freedom of the seas and the French Navy. The insular position of England and the Channel Tunnel. Aviation's Hour. To reach Germany a blow must be struck at her mercantile Marine.

GERMANY.

MILITÄR WOCHENBLATT.

No. 1. July. The list of Germans for trial at Leipzig. The World in arms—Germany impotent. Modern war-direction. Bolshevism. *Nos.* 2/3. The struggle over the period of military service in France. Militarism as destroyer of commercial activity. War memories and the Leipzig trials. Disarmament. Submarine warfare and the employment of gas. *No.* 4. The Russian Army in the World War (by General von Kuhl). The training of leaders. What are the basic principles of infantry tactics. The Allies' war crimes. English naval history. *No.* 5.

Catch words and phrases. Delbrück *versus* Ludendorff. The Red Army. From the occupied territory. *No.* 6. Monarchist and Republican. The risk of a Franco-German war in 1875. The Poles in Germany. *No.* 7. An end to war. The French views on cavalry in the war (by General v. Poseck). Germany's aircraft industry. How the French soldiers were retained under arms in 1918. The cost of the occupation of the Rhineland. *No.* 8. The French views on cavalry in war (concluded). England's aircraft industry. The Indian Army of the Netherlands. Emigration to the Brazils. Coloured French soldiers on the Rhine. The Red Army. *No.* 9. The psychological school. Our enemies on the World War. The voice of the Continent on the Leipzig trials. Aircraft. The enemy from without. *No.* 10. Versailles—and Peace. The best reply to Poincaré. The psychological school (concl.). Aircraft. *No.* 11. [Not received.] *No.* 12. Men and weapons, by General von Kuhl. The military state of Great Britain. Guilt or complicity. Psychology and tactics. The results of the German Gliding Trials. *No.* 13. Ballistics. A contributory stab in the back. Psychology and the officer in the fighting line. The threatened Rhine provinces. *No.* 14. Thoughts on artillery tactics in a future war. Military aviation in Norway, Finland, Denmark, Belgium and Switzerland. The guardians of justice. Reminiscences of the World War.

NAVAL.

MARINE-RUNDSCHAU.

July–August.—The *rôle* of Sea-power in French History. The Russian Army in 1917 and the Revolution. Sea-protection and the Naval Law of the Netherlands. The importance of the sea route to Siberia.

September.—The *rôle* of Sea-Power in French History (cont.). The Russian Army of 1917 and the Revolution (cont.). State-owned ships.

ITALY.

NAVAL.

RIVISTA MARITTIMA.

July–August.—On the methods of aerial photography. Magellaniana. Discipline. Historical Notes on naval technicalities.

SWITZERLAND.

REVUE MILITAIRE SUISSE.

August.—The strategic basis of military reorganisation. The future of our Army (conclusion). New regulations, doctrines and methods.

September.—Plans H and H[1] (dealing with the plans drawn up for resisting a German offensive by way of Switzerland during the War). The infantry gun. The sixth arm. Army headdresses.

PRINCIPAL ADDITIONS TO THE LIBRARY.

August, September and October, 1922.

THE EMPEROR NICHOLAS AS I KNEW HIM. By Major-General Sir J. Hanbury-Williams, K.C.B., etc. Illustrations. 15s. 8vo. London, 1922.

THE COLONIAL CLIPPERS. By B. Lubbock. Illustrations. 8vo. Glasgow, 1921.

THE INSURRECTION IN MESOPOTAMIA, 1920. By Lt.-General Sir A. L. Haldane, G.C.M.G., K.C.B., D.S.O. Illustrations and Maps. 21s. 8vo. London, 1922,

THE GREAT ADVENTURE AT WASHINGTON: THE STORY OF THE CONFERENCE. By M. Sullivan. 10s. 6d. 8vo. London, 1922.

THE SECRET SOCIETIES OF IRELAND: THEIR RISE AND PROGRESS. By Captain H. B. C. Pollard. 12s. 6d. 8vo. London, 1922.

A TREATISE ON THE DUTY OF INFANTRY OFFICERS AND THE PRESENT SYSTEM OF BRITISH MILITARY DISCIPLINE. By T. Reide, Esq. 8vo. Dublin, 1797. (Presented by Colonel G. Frend, C.B.)

MANUAL AND PLATOON EXERCISES FOR PERCUSSION FIRELOCKS. 8vo. London, 1844. (Presented by Colonel G. Frend, C.B.)

REGULATIONS FOR CONDUCTING THE MUSKETRY INSTRUCTION OF THE ARMY. 8vo. London, 1859. (Presented by Colonel G. Frend, C.B.)

THE NEW JAPANESE PERIL. By S. Osborne. 10s. 6d. 8vo. London, 1921.

THE PROBLEM OF UPPER SILESIA. By S. Osborne. 7s. 6d. 8vo. London, 1921.

THE THISTLE. THE REGIMENTAL JOURNAL OF THE ROYAL SCOTS. New Series, Vols. I. (1904–5) and IV. (1910–12). 8vo. Edinburgh. (Presented by Captain S. McCance.)

A GEOGRAPHY OF IMPERIAL DEFENCE. By Vaughan Cornish. Maps. 6s. 6d. 8vo. (Sifton, Praed & Co.) London. (Presented by the Publishers.)

THE OXFORDSHIRE AND BUCKINGHAMSHIRE LIGHT INFANTRY CHRONICLE, 1919–20. Compiled and Edited by Lieut.-Colonel A. F. Mockler-Ferryman. Illustrations. 8vo. (Eyre & Spottiswoode.) London, 1922. (Presented by the Editor.)

INFANTERIE IN DER VERTEIDIGUNG UND IM ANGRIFF. Von Hauptmann M. Pfeiffer. 8vo. Berlin, 1922. (Presented by the Author.)

STATISTICS OF THE MILITARY EFFORT OF THE BRITISH EMPIRE DURING THE GREAT WAR, 1914–1920. Folio. London, 1922. (Presented by the Secretary, War Office.)

STANDING ORDERS OF THE 104TH BENGAL FUSILIERS. 4to. Dover, 1875. (Presented by Colonel G. W. Savile, D.S.O.)

THE EASTERN QUESTION: AN HISTORICAL STUDY IN EUROPEAN DIPLOMACY. By J. A. R. Marriott. Second edition. 8s. 6d. 8vo. Oxford, 1918.

PERSIA. By Brig.-General Sir P. Sykes, K.C.I.E., etc. 7s. 6d. 8vo. Oxford, 1922.

THE BALKANS: A HISTORY OF BULGARIA, SERBIA, GREECE, RUMANIA, TURKEY. By N. Forbes, A. J. Toynbee, D. Mitrany and D. G. Hogarth. 7s. 6d. 8vo. Oxford, 1915.

THE BOOK OF REMEMBRANCE OF THE HISTORICAL ASSOCIATION OF ANNAPOLIS ROYAL. A.D. 1921. Edited by L. M. Fortier. Illustrations. 8vo. Toronto, 1921. (Presented by L. M. Fortier, Esq.)

A HISTORY OF THE GREAT WAR. By J. Buchan. Vol. IV. Maps. 25s. 8vo. (T. Nelson & Sons, Ltd.) London, 1922. (Presented by the Publishers.)

THEORY OF WAVE-TRANSMISSION. By G. Constantinesco. Second edition. 10s. 6d. 8vo. (W. Haddon, 132, Salisbury Square, E.C.4.) 1922. (Presented by the Publishers.)

PRINCES OF WALES. By F. M. Bridge. Illustrations. 8s. 6d. 8vo. (H. F. W. Deane & Sons). London, 1922. (Presented by the Publishers.)

SCOTTISH CANALS AND WATERWAYS. By E. A. Pratt. 10s. 6d. 8vo. (Selwyn & Blount, Ltd.). London, 1922. (Presented by the Publishers.)

H. G. HAWKER, AIRMAN: HIS LIFE AND WORK. Illustrations. By M. Hawker. 18s. 8vo. London, 1922.

REGULATIONS AND INSTRUCTIONS RELATING TO H.M. SERVICE AT SEA. 8vo. London, 1772. (Presented by Mrs. Chapman.)

BATTLE STUDIES, ANCIENT AND MODERN BATTLE, By Colonel A. du Picq. 12s. 6d. 8vo. New York, 1921.

THE CZECHOSLOVAK REPUBLIC: A SURVEY OF ITS HISTORY AND GEOGRAPHY. By J. Cisar and F. Pokorný. 9s. 8vo. London, 1922.

THE MACEDONIAN CAMPAIGN. By L. Villari. Maps and Illustrations. 25s. 8vo. London, 1922.

HISTORIES.

HISTORICAL RECORDS OF THE 2ND Q.V.O. SAPPERS AND MINERS, 1910–1919. Vol. II. 8vo. Bangalore, 1921. (Presented by the Officers, 2nd Q.V.O. Sappers and Miners.)

THE HISTORY OF "A" BATTERY, 84TH ARMY BRIGADE R.F.A., 1914–1919. By Major D. F. Grant, M.C. 8vo. London, 1922.

HISTORY OF THE GREAT WAR, BASED ON OFFICIAL DOCUMENTS, MEDICAL SERVICES, GENERAL HISTORY. Vol. I. By Major-General Sir W. G. Macpherson, K.C.M.G., C.B. 21s. 8vo. London, 1921.

HISTORY OF THE 7TH BATTALION QUEEN'S OWN CAMERON HIGHLANDERS. By Colonel J. W. Sandlands, C.B., C.M.G., D.S.O., and Lt.-Col. H. Macleod, C.M.G., D.S.O. Illustrations. 4s. 10d. 8vo. Stirling, 1922.

RECORDS OF THE IV. MADRAS PIONEERS (NOW THE 64TH PIONEERS), 1759–1903. By Major H. F. Murland. Maps. 4to. (Higginbothams, Ltd.) Bangalore, 1922. (Presented by the Officers 64th Pioneers.)

HISTORY OF THE 1/1ST HANTS ROYAL HORSE ARTILLERY DURING THE GREAT WAR, 1914–1919. Edited by Captain P. C. D. Mundy. Illustrations. 8vo. (Hampshire Advertising Company, Ltd.) Southampton, 1922. (Presented by the Author.)

HISTORY OF THE GREAT WAR, BASED ON OFFICIAL DOCUMENTS. PRINCIPAL EVENTS, 1914–1918. Compiled by the Historical Section of the Committee of Imperial Defence. 10s. 6d. 8vo. (H. M. Stationery Office). London, 1922. (Presented by Colonel E. Y. Daniels, C.B.E., Secretary, Committee of Imperial Defence.)

NOTICES OF BOOKS.

Entwickelung der Taktik im Weltkriege. By LIEUT.-GENERAL W. BALCK. (Eisenschmidt, Berlin.)

This work is a very interesting survey of the changes and innovations brought about on both sides by experience and material and physical deterioration.

The author comments on the danger of forgetting the lessons of war experience and the curious reactions set up in military circles by the failure or success of certain methods. He favours the idea of envelopment, leading to a battle of Cannæ, even with a numerically inferior army, and contrasts the French pre-War conception

of an army advance guard which is to gain information to enable decisive dispositions to be made with the German idea of acting on a predetermined plan.

After commenting on the varying quality of officer reinforcements, he proceeds to discuss the methods, training and organisation of the various branches of the German, Austrian and French armies, praising the skill of English and French in the use of ground individually and collectively.

In dealing with Western trench warfare he is in doubt as to whether modern technical accessories favour attack or defence, but attaches the greatest importance to surprise. It is interesting to note that this feature was discounted as regards the French push (20th Corps) in the Champagne by the capture of an early operation order. English prisoners who spoke of Lord Byng's attack at Cambrai were fortunately disbelieved. It is stated that infantry reports of mining prior to the 1917 assault of Messines ridge were disregarded by the German engineers, but a German book (" Der Mineur im Felde," Brit. Museum) states that German tunnellers were quite aware of our subterranean activities.

General Balck says that the unexpected rapidity of Allied artillery development led to the construction of second and third lines in order to compel the enemy to deploy his guns anew for the attack on the rearward lines.

The engagement at Vailly, 30/10/14, was the first case of synchronised co-operation of infantry and artillery.

On the Somme the machine-gun fire of low-flying planes was more effective than the short-lived surprise caused by our tanks. German infantry became reluctant to construct continuous lines from shell hole positions on account of the greater losses due to their visibility on aerial photographs.

The Verdun autumn fighting showed somewhat different French tactics, involving better use of the ground than the method laid down by Marshal Joffre. These innovations were due to General Nivelle, but were countered by a weak occupation of the front lines and heavy machine-gun fire on the intermediate ground between the lines.

In dealing with the Russian and Italian fronts, he pays tribute to the improved efficiency and zeal of the Russian staff. The Russians showed great skill in rearguard actions and field fortification, but were lavish of men in the attack. They were adepts in crossing swamps, resembling in their nature Canadian Muskeg. The observations on the war in Italy are chiefly interesting in showing the specialised nature and peculiar difficulties of Alpine warfare.

A chapter on technique gives a brief survey of the supply of raw materials and substitutes, and discusses signal service, aircraft, tanks, gas and mine-throwers. The author emphasises the paramount importance of the moral factor, and is of opinion that, failing the discovery of adequate means of defence, aircraft will be the decisive factor in future warfare. German machine-guns made a point of closely supporting attacking infantry, being distributed in depth, with the light machine-guns ahead. Heavy machine-guns should enable infantry and light machine-guns to reach their fire position. In defence, machine-guns had to be distributed in depth and concealed. Their first serious opponents were tanks. The French preferred using machine-guns from positions such as trees and houses rather than in the firing line, and for defence at close ranges; similar ideas prevailed in Russia. English machine-guns were specially efficient as regards the qualities of the gun and the methods used in fighting the gun.

In dealing with Infantry the author states that whilst the French, prior to the war, underestimated the effect of German rifle and machine-gun fire, the Germans were surprised at the effectiveness of French field artillery.

The Germans attached great importance to fire superiority to be gained by

artillery and machine-guns, whereas the French Army was more concerned with pushing ahead. Cavalry can only gain outlines of enemy disposition; consequently, infantry must participate in battle reconnaissance as well as artillery officers. When the attack is succeeding at weak points, reserves should be thrown in there to turn progress into victory; they should not be used to repair gaps or revive an advance which is held up. The use of the spade is not favoured except when the advance is more or less definitely arrested. Some remarks are devoted to the psychology of the charge and reorganisation; these are in part humorous. In a night attack surprise and *morale* are paramount factors. The observations on village- and wood-fighting, and German attacks with limited objectives, contain no special features.

The author goes on to the organisation of trench systems into a weakly held outpost zone, and the main line of resistance or battle zone. The weak occupation and diminished maintenance being discernible on aerial photographs, stronger occupation is advisable in quiet times, to be in part withdrawn by order when a grand attack is seen to be imminent. The difficulties of deciding on, and executing such withdrawal are then dealt with. Special troops should be detailed to carry out the counter-attack against an enemy who has penetrated into and occupied part of the trench system; the staff must maintain close *liaison* with the occupying units.

Dealing with cavalry, much importance is attached to leadership. Cavalry should not wait for opportunities to charge, but endeavour to throw its weight of fire power against weak spots. Allusion is made to the French 5th Cavalry Division raid during the battle of the Marne. Allied cavalry is said habitually to have avoided threatened German charges; lists are given of such occasions. German cavalry did well on Russian front, and its dash in patrol enterprises obtained frequent successes on the Western front. The advance of the 1st and 2nd German Army was completely screened. Cyclists seem to have been useful. The French cavalry tended more and more to become mounted infantry.

The artillery of new and reserve formations was insufficient, and the rapid increase of the German army made it necessary to resort to four gun batteries. Trench warfare called for larger supplies of H.E. shells. Railway guns came into use, and whilst the Germans paid more attention to the development of high angle fire, the Allies favoured flat trajectory guns. Great strides were made by the introduction of sound- and light-ranging sections and the elimination of registration.

The author comments on infantry and aerial co-operation with artillery, changes in methods of combatting enemy infantry and artillery, and the functions of artillery in the *grande bataille*. A number of interesting tables are included.

The last chapter deals with the methods of attack and defence in, and the events of 1918; the arrival and effect of fresh American troops, when the German companies were often down to a strength of 30 rifles and composed of inferior and untried officers and men.

An appendix gives the French instructions of February, 1920, for the infantry combat.

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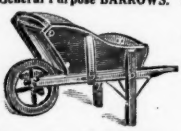

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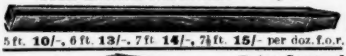

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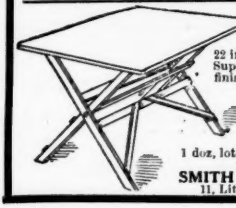

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Egypt, Soudan, Palestine—AGENT: Mr. J. B. Caffari, Military Contractor, Cairo.

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STAFF COLLEGE.

At the examination under the new syllabus held in February, 1922:—

CAMBERLEY.

The following numbers from the various units on the successful list read with us:—

CAVALRY - - - TWO | INFANTRY - - - SIX
INDIAN ARMY - - - FOUR

Making a total of Twelve out of Twenty-Eight vacancies, besides Nineteen others who qualified, Thirteen of whom were nominated.

QUETTA.

Eleven out of the number admitted.

PROMOTION.

During 1921 and 1922 seventy officers who read with us passed,

OTHER RECENT SUCCESSES, 1919 TO 1922, INCLUDE:—

NAVY (Special Entry) - TWO | SANDHURST - - FORTY-FOUR
WOOLWICH - - - ELEVEN | ROYAL AIR FORCE - TEN
INDIAN POLICE - - THREE

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